

Digitized by the Internet Archive
in 2011 with funding from
University of Toronto



INDEX

TO THE

INDEPENDENT PRACTITIONER.

VOLUME VII.

ORIGINAL COMMUNICATIONS.

Application of and Elements of Success in Crown Work. C. L. Anderson.	465
Aqua Calcis. George J. Friedrichs.....	235
Calcific Deposits in Tooth Pulp. Edgar D. Swain.....	281
Caries and Necrosis of the Jaws. J. H. Martindale.....	674
Chicago College of Dental Surgery. James A. Swasey.....	245
Cocaine, About. C. E. Francis.....	356
Crown Work and English Tube Teeth. Lawrence Vanderpant	20
D. D. S. or M. D.; Which? Geo. H. Chance.....	343
Density of Teeth as Influenced by the Food and by the Administration of Lime Salts. W. D. Miller.....	597
Dental Chemistry. S. B. Palmer.....	241
Dental Phosphorénèses, or Caries. Edward S. Niles.....	1
Duties of a Dentist to Himself and Others, The. G. L. Curtis.....	130
Editors and Editing. Garrett Newkirk.....	81
Exostosis, or Dental Osteoma. W. C. Barrett.....	409
Extraction of Teeth for Parturient Women, The. Garrett Newkirk.....	18
Further Evidence of Prehistoric Dentistry. J. G. Van Marter.....	57
Gelatine-forming Micro-organisms. G. V. Black.....	546
Golden. J. W. Clowes.....	612
Historical Reminiscences. C. S. Chittenden.....	65
Hydro-Carbon Furnaces for Dental Operations. C. H. Land.....	14
Inflammation of Dentine (Eburnitis). Carl Heitzmann and C. W. F. Bodecker	120
Irregularities of the Teeth and their Treatment. F. E. Howard.....	359
Loculosis Alveolaris. J. N. Farrar.....	457
New System of Restoring Badly Decayed Teeth by means of an Enameled Metallic Coating, A. C. H. Land.....	407
Notes on the Decay of Human Teeth. W. D. Miller.....	533

On Certain Fermentative Processes in the Alimentary Canal, and the Micro-organisms by which they are Produced. W. D. Miller.....	61, 113
On Certain Gas-forming Bacteria of the Alimentary Canal, their Fate in the Stomach, and their Reaction on Different Foods. W. D. Miller.....	169
Pain Obtunders. A. W. Harlan.....	475
Perils of Practice, The. Geo. L. Parmele.....	73
Personal Recollections of a Dentist of the Early Days. L. W. Bristol....	9, 683
Pocket Disease of the Alveolus. J. N. Farrar.....	172
Popular Appreciation of Dentistry. L. C. Ingersoll.....	542
Professional Courtesies in Connection with what are Commonly Considered Failures in Dental Practice. C. E. Francis....	538
Pyorrhœa Alveolaris. Alfred R. Starr.....	397, 661
Retrospective Glance, A. Herbert A. Birdsall....	292
Sanitas. E. S. Talbot.....	19
Sanitas Oil. A. W. Harlan.....	184
Sanitas Oil. E. S. Talbot.....	296
Scythian Dentistry. W. H. Eames.....	290
Setting Teeth in Artificial Sockets. S. S. Southworth.....	478
Some Thoughts and Experiments upon Erosion. Edgar D. Swain....	178, 225
Systematic Study. J. D. Moody.....	480
Teeth with Exposed Pulp. Devitalization and Subsequent Treatment. B. Merrill Hopkinson.....	380
Teeth with Exposed Pupls. Garrett Newkirk.....	548
Testing the Power of Antiseptics W. D. Miller.....	288
Tin and Gold Combined. J. H. Spaulding.....	77
Tooth Crowns. Samuel F. Howland....	137
Uses of Ferrules in Regulating Teeth, The. J. N. Farrar.....	337
Verrier's and Schiltsky's Continuous Gum Methods. A. Witzel.....	79
Visit to Foreign Dental Schools, and other Observations. A. W. Harlan	229, 393, 605
Wail of the Second Bicuspid. Chas. Jenkins.....	133

REPORTS OF SOCIETIES.

American Academy of Dental Science	98
American Dental Association.	22, 83, 482, 550, 616, 689
American Dental Society of Europe.	31
Central Dental Association of Northern New Jersey.	253, 299
Dr. Wilhelm Herbst's Visit to America.	433
First District Dental Society of New York.	38, 139, 190, 263, 627, 693
Herbst Clinics in America, The.	505, 574, 637, 701

I llinois State Dental Society.....	305, 362, 445
L ouisiana State Dental Society.....	198, 247
M eeting of the German Naturalists and Physicians at Berlin.....	696
N ew Orleans Odontological Society.....	260
N ew York Odontological Society.....	94, 148, 194, 303, 372
P ennsylvania State Dental Society.....	489, 561, 630
S outhern Dental Association.....	496, 567

Always above 319 EDITORIALS.

A. D. A Meeting, The.....	449
A bbot, Dr. F. P.....	651
A merican Dental Association, The.....	323
A nd yet Another Journal.....	710
A nother Dental Journal.....	652
A nother Specific.....	105
A pologetic.....	45
A nother Apology.....	524
A pologizing Again.....	653
A re Micro-organisms Scavengers or the Producers of Pathological Conditions?	449
A ttention.....	524
C ocaine.....	270
C ogswell's Disk Carrier.....	46
C raniotomy.....	105
C ritic, A Muddled.....	104
C rowded Out.....	158
"D octor".....	650
D onaldson's Pulp Canal Cleansers.....	159
D r. Allport's Pyorrhœa Instruments.....	45
D r. Miller's Paper on Fermentation.....	158
E nd of the Volume.....	709
F raudulent Certificates from Germany.....	652
G reek Terminations.....	584
H erbst Clinics at Niagara, The.....	451
H erbst Methods, The.....	583
I llinois State Dental Society, The.....	382
I mpantations of Teeth.....	646
I nternational Medical Congress Again.....	43
L abor Lost.....	45
M edical Specialties.....	524

Niagara Meeting, The.....	379
Our Book Table.....	711
Place of Meeting, The.....	206
Post-Graduate Study.....	325
Prehistoric Art.....	158
Pulpitis.....	381
Question of Propriety.....	156
Scientific Accuracy.....	268
Scientific Intolerance.....	523
Scientific Societies.....	452
Settled at Last.....	266
"The Dental Profession".....	269
To Contributors.....	452
To Junior Dentists, No. 4.....	99
To Junior Dentists, No. 5.....	319
To Junior Dentists, No. 6.....	374
To Junior Dentists, No. 7.....	704
To New Subscribers.....	326
To Our Subscribers.....	380
To Subscribers.....	452
Twenty-sixth Annual Meeting of the American Dental Association, The...	519
Underwood Spring Water.....	159
Visit of Wilhelm Herbst, The.....	446
Why do Indians Have Such Good Teeth.....	450

BIBLIOGRAPHICAL.

.....46, 159, 271, 327, 585

CURRENT NEWS AND OPINION.

.....53, 106, 164, 207, 273, 329, 383, 453, 525, 591, 654, 712

THE
Independent Practitioner.

VOL. VII. JANUARY, 1886. No. 1.

Original Communications.

DENTAL PHOSPHORÉNESES, OR CARIES.

BY EDWARD S. NILES, D. M. D.

READ BEFORE THE HARVARD ODONTOLOGICAL SOCIETY AT BOSTON, FEB. 28,
1875; ALSO BEFORE THE MASSACHUSETTS AND CONNECTICUT VALLEY
SOCIETIES AT WORCESTER, MASS., JUNE 24, 1885.

It is not always fair to hold a man to his own utterances, for it should be borne in mind that most men speak impulsively, and give expression or emphasis to that phase of a truth only which events have caused to be temporarily prominent before the mind. None of us stay keyed to a degree of watchfulness that can prevent all unguarded speech. Human nature must be vastly improved before the utterances of truth become universal, at least in the dental world, and the student will, doubtless, for generations to come, be obliged to select from a confusion of facts and improbabilities the knowledge that is to fit him for his sphere in life. Hence, the principal difficulty in dealing with the writings and discussions upon dental caries is the fact that the claims of those who have studied the subject involve part of the truth; those who oppose the theories advanced claim a whole error, and those who favor it the whole truth, and both become, in either case, impracticable theorists.

From year to year, as the result of earnest and faithful observation, some member of our profession presents a phase of the process of decay which should be allowed to remain before our minds, for without a system of records facts, do not accumulate. It is like an

attempt to fill a bucket with water while there are holes in the bottom.

Close observation in the practice of past years has demonstrated many truths; many are self-evident, requiring no rigid experimental proof for acceptance; others, from circumstantial evidence, have been among the probabilities, and although not able to tell the why and wherefore, we have been more or less governed by them. There is, however, a universal feeling of applause among the members of our profession when a member makes a special study of the causes and progress of decay, and by experimental proof confirms our opinions. Inflammation, bacteria, putrefaction, fermentation, and various acids, are among the causes advocated and opposed. While we cannot select any one of these as fully explaining the phenomena of decay, we are forced to admit that each bears to us a part of the truth, and each, directly or indirectly, enters into and plays a part in this process. What earnest and honest student will not admit that inflammation is a factor in decay, and that the presence of micro-organisms has an influence upon this process? Who is prepared to wholly exclude many of the organic and mineral acids, or fermentation and putrefaction, with their products? The advocates of these theories occupy a prominent place in the profession, and when professional jealousies are no more, all will acknowledge their indebtedness.

Just at present, we are unusually interested in the experiments progressing at Berlin, conducted by Prof. Miller. His conclusions, I believe, are drawn from scientific reasoning, but though they bear the stamp that would lead us to accept all without hesitation, the sober after-thought makes us question just how much of the truth they bring to us. In justice to him, I will say that my criticisms are not based wholly upon my own experimental knowledge, or upon a repetition of all of his experiments, but partially upon those of well known authors, in and outside of our profession. Under the following six heads of conclusions printed in the May number of the *INDEPENDENT PRACTITIONER*, Prof. Miller sums up what he claims has been established and confirmed by him and others, in his method of study.

1st. "The observation of Leber and Rottenstein, that micro-organisms are constantly present in decaying dentine, has been confirmed. (Weil, Milles and Underwood, Miller.)"

Prof. Miller's experiments to confirm this are of great value.

2d. "The softening of dentine in caries has been shown to be chemically identical with that produced by certain weak organic acids. (Miller, Jeserich, Bennefeld.)"

I will affirm that the softening of dentine is *chemically identical* with that produced by any acid capable of removing the lime salts from dentine, which embraces a large number of organic and inorganic.

3d. "It has been established that various organisms found in the human mouth produce the decalcifying acid by first converting non-fermentable sugars into fermentable varieties; and secondly, by splitting fermentable sugars into lactic acid. (Miller, Hueppe.)"

It is not a new discovery that certain ferments, contained in saliva as well as other secretions of the body, have not only the power of converting cane sugar into grape sugar, but also of converting starch into the same sugar. It has also been generally understood that fermentable sugars may be converted into lactic acid, in the human mouth, by fermentation. The result of Magitot's experiments fairly established the presence of this process, and its effects upon tooth structure. Prof. Miller, however, deserves the credit of being more minute and exhaustive in his work. What he does affirm under this head, that is new, is that from sugar lactic acid is formed, and that this is the decalcifying agent in dental caries. It is possible lactic acid is generated from starches and sugars to an extent sufficient to respond to the zinc test, but the quantity produced no one has theoretically or experimentally shown. That lactic acid alone produces, or is the principal factor in decay, is very doubtful. It is further claimed that it is quite as possible to produce acetic acid from the varying fermentative elements and ferments of the mouth, as lactic acid.

4th. "The same organisms have been found capable of dissolving decalcified dentine, while they have no apparent effect, even after two or three years, on sound dentine. (Miller.)"

It is contrary to previous experimental teaching of the development of germs, that the same germinal ferment that converts unfermentable sugars into fermentable, and fermentable sugars into lactic acid (which must be of the acid variety), should also have the power to decompose albuminous tooth matrix, whose product would be alkaline, and require germs that propagate in that medium. Furthermore, this last action antagonizes the first by its alkalinity, and it is readily seen that this would neutralize the acid and arrest decay.

Unfortunately this is not the case, and many observations confirm the belief that the faster the matrix becomes exposed and softened, the more rapidly decay advances.

5th. "Caries of dentine, chemically and morphologically identical with natural caries, has been produced outside of the mouth. (Miller.)"

Dr. Miller has produced decalcification of dentine out of the mouth, in such a way that the matrix appears the same under the microscope as that decalcified in the mouth. Chemically, decay is the removal of the carbonate and phosphate of lime and the phosphate of magnesium from the tooth by acids, which is a very easy thing to accomplish out of the mouth.

Morphologically, decay is quite an impossible thing to accomplish out of the mouth. A tooth may be decalcified, or decay set up out of the mouth, but the vital resisting power of the tooth (inflammation, zone of resistance) cannot be counterfeited.

It is these influences, combined with the decomposed elements of the tooth, that create the different shades of matrix left, and what we call "white," "dark," "brown" decay.

6th. "It has been further shown that certain of the organisms of the human mouth are capable of developing under exclusion of air, thus making it possible for them to propagate within the substance of the dentine. (Miller, Hueppe.)"

If the certain germs are the same that produce lactic acid from sugar in the substance of the dentine, they are far from their base of supplies, and will hardly be able to develop lactic acid from sugar, as, from last accounts, there was no sugar in dentine at points too far in the tooth for the penetration of air, and Prof. Miller does not believe in the destruction of dentine by the physical force of these germs.

In submitting the above criticisms, after a careful study of Prof. Miller's work, I do not wish to be understood as bringing any serious refutation of his claims, unless he has cleared or covered the ground to his own satisfaction. I understand his conclusions under these six heads to be final, and that he has so placed them before the profession.

I regard his experiments, leading up to the above conclusions, as the most rigid and comprehensive that the dental profession have had the honor of receiving from among its members, and in the main

valuable, in that they establish what we have long felt true, and we have to thank him for this acquisition to our theory and practice of dentistry.

I cannot feel, however, that we have sufficient evidence to believe that the persistent acidity along the border line of decay, or between the line of sound dentine and the decalcified matrix, is due to lactic acid. The frequent location and progress of the trouble alone leads us to look for the cause within the tooth.

The presence of an acid reaction at the point indicated is unquestioned, and it must also be conceded as a product of fermentation. Prof. Miller has seen evidences of sugar fermentation, and detected lactic acid in caries. Whether he believes that the sugar element produces acid sufficient for the whole decalcification in caries, he does not affirm; he gives us no idea how great a quantity is produced in the tooth or mouth, and what portion of this is neutralized by an alkaline saliva, or what amount may possibly find its way to tooth substance to be neutralized by the lime of the tooth acting as an antacid.

Let us suppose, for a moment, that we have a closed, secluded point on the approximate surface of two superior bicuspid, at a small defective place in the enamel; it progresses rapidly, and although one-third of the tooth crown is destroyed, the enamel remains apparently intact, the only evidence of decay visible being the discoloration. Not even the finest instrument is admitted until the enamel is broken, and then we find a decalcified and softened matrix, which is strongly acid throughout. I might cite many instances of decay where there is no apparent place for the lodgment of sugars.

If the acid theory is correct, as previously presented, we must believe that the acids are either developed about the external surfaces of the teeth, and after development enter the cavity as such, or they are developed in the tooth from foreign materials which have entered the cavity as food, saliva, sugars, etc. It would seem if the acids are developed outside, its presence would be marked by greater destruction of the enamel.

In either case, we are left to surmise the force and source of material that maintains this condition, favoring decay in the cavity from without, also that which bears away the products of decalcification.

As far as we know, there are four sources of alkaline products, so located as to neutralize the acids generated, and thus positively antagonize decay.

1st. The vital resisting power of the tooth.

2d. The alkalinity of saliva.

3d. The alkaline products from the decomposing tooth matrix.

4th. The antacid effect of the lime salts of the tooth.

In the outward elements, what is the place of lodgment in a well kept mouth for starches and sugars from which to develop acids sufficient for the demand? and in the advanced stages of decay, how are they carried to the point of decalcification? At this time I do not wish to attempt to point out all the probabilities and improbabilities in the theories previously advanced, regarding the progress of decay. There is, however, sufficient evidence to believe that external agents contribute to the acid supply in the *primary* stages of decay, but in the advanced and more rapid progress of the trouble a greater source of decalcifying power is apparent.

It is my purpose in this paper to point out a possible source of a destructive agent previously overlooked, and if my tests are confirmed it is an important factor in maintaining the acidity of caries. Though not alone considered a solution of the whole trouble, it must be an important link in the chain of chemical changes to which we must attribute decay. We all know that teeth are composed of from sixty to ninety per cent. of phosphate of lime and magnesium, there being present only from two to three per cent. of fluoride of calcium, and from five to ten per cent. of carbonate of calcium. If ultimate decomposition of these salts were to take place, sixty to ninety per cent. of the tooth would be a source of acid sufficient for its own destruction.

I am well aware that this reaction in the tooth has been questioned, but in the production of artificial caries by phosphoric acid there is striking similarity of the various shades and conditions of decay. The test for free phosphoric acid is rendered difficult, because of the probable presence of a phosphatic salt. I have sufficiently studied the matter, however, to feel confident that, before the publication of this paper, I shall completely demonstrate and confirm that the great destructive agent of inorganic tooth structure is developed from the tooth itself, by the liberation of phosphoric acid by fermentation or putrefaction.

BOSTON, Nov. 11, 1885.

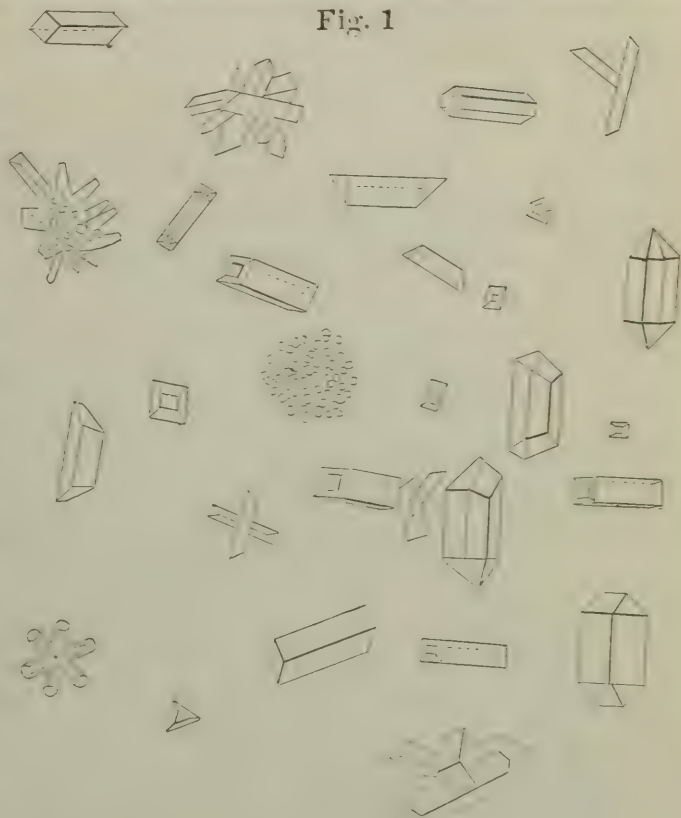
Since writing the above paper I have perfected my tests, and furnished what seems to me conclusive proofs of the presence of free phosphoric acid in human dental caries. So abundant is its presence, and so simple the test, that any dentist with an elementary knowledge of chemistry may verify the experiments for himself.

The following are my experiments:

A few drops of free phosphoric acid were placed in a test tube, with about six times its bulk of distilled water. Ammonia was added slightly in excess. To this was added sulphate of magnesia, after which ammonium

Fig. 1

chloride (sal ammoniac). This was left to crystallize for twenty-four hours, then with a glass rod, on which had been previously slipped a piece of rubber tubing, crystals were detached, placed upon a slide, and brought under a microscope of three hundred diameters or more. Fig. 1 accurately represents some of the forms of crystallization of ammonio-magnesium-phosphate found in the field.



These specimens of triple phosphate crystals were selected from a large variety and confused crystallized mass. The character of the crystals is mainly recognized by the angle of crystallization.

Taking this for my type or standard of comparison, I proceeded in the following way to test decayed teeth for free phosphoric acid. The decay was removed from thirty freshly extracted teeth, and placed, with about forty grammes of distilled water, in a common earthen mortar, and well ground and stirred. This was allowed to stand twenty-four hours, and again stirred and filtered. The filtrate

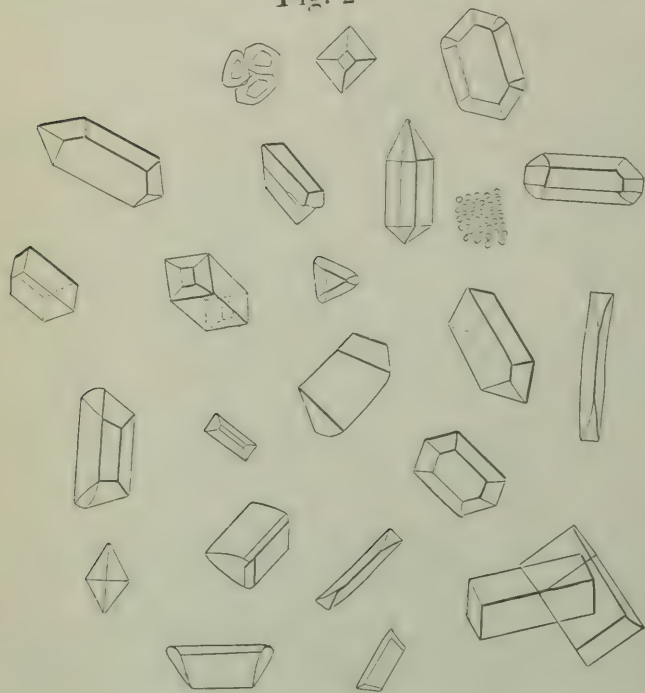
(quite clear), on being testing, was found acid. (It reddened blue litmus.) Preliminary tests were first applied to this liquid in the following way: To a portion was added strong nitric acid until strongly acid. Into this was introduced a small crystal of molybdate of ammonium. A very marked precipitate of yellow phospho-molybdate of ammonia was soon observed, indicating the presence of free phosphoric acid, or a phosphate. As it was possible that the above precipitate might be due to the presence of the salts of phosphate of lime and magnesium held in solution by other acids, and not due to free phosphoric acid alone, the following confirmatory tests were applied:

The remainder of the above filtered solution was evaporated in a porcelain evaporating dish to one-half its bulk. To a portion of this was added pure ammonia hydrate (no precipitate occurred, indicating the absence of a phosphate.) The test was then continued as in producing the preceding standard of comparison. Ammonia was added slightly in excess, then several drops of sulphate of magnesium, also ammonium chloride (sal ammoniac), and the whole well

shaken. A precipitate of ammonio-magnesia-phosphate formed slowly.

This solution was allowed to stand in a test tube for twenty-four or thirty-six hours to crystallize. With a small glass rod, on which was slipped a piece of rubber tubing, crystals were removed from the sides of the tube to a slide, and placed under the microscope of about three hundred diameters for examination. The field was literally filled with

Fig. 2



Crystals of ammonio-magnesia-phosphate prepared from phosphoric acid taken from dental caries.

crystals, and unmistakably the triple phosphates referred to, as will be seen in the accompanying Fig. 2.

It will at once be seen that these crystals could not be formed without free phosphoric acid. Here are four distinct tests, and any one of the three last named sufficient to fairly prove the presence of free phosphoric acid. Then, if phosphoric acid is present in decay, there can be no other source for it than from the phosphates of the tooth. So abundant are the proofs of free acid, and the almost entire absence of phosphates, that I am led to believe that this acid alone is the main factor in tooth destruction, and beyond question responsible for the acid reaction so persistent along the border line between decay and sound tooth structure, the presence of acids derived from food, etc., playing a very insignificant, or no part at all, in deep-seated dental caries.

Under the light of the above experiments, it may be stated as reasonably true that decay in teeth progresses, not wholly because of an insufficient amount of lime salts, but rather because of incomplete organization of the phosphates and imperfect tooth development, rendering possible the decomposition or splitting up of tooth substance into its proximate principles.

Without submitting further experiments or expression of opinion, at this time, as to the probable agents that may influence the decomposition of phosphate of lime and magnesium into their proximate principles of lime, magnesium and phosphoric acid, or the part which the fluorides play in the process of decay, I present this, hoping it may furnish a basis for valuable experiments for those who may be now engaged in the study of the subject.

PERSONAL RECOLLECTIONS OF A DENTIST OF THE EARLY DAYS.

BY DR. L. W. BRISTOL, LOCKPORT, N. Y.

READ BEFORE A UNION MEETING OF THE SEVENTH AND EIGHTH DISTRICT
DENTAL SOCIETIES OF THE STATE OF NEW YORK, HELD IN
BUFFALO, OCTOBER 27 AND 28, 1885.

PUBLISHED AT THE REQUEST OF THE SOCIETIES.

About the year 1837 or 1838, there was a dentist in practice in the City of Buffalo, by the name of Bigelow. He used to sally out into the neighboring towns and hamlets, and once dropped down upon the village of Lockport. His fees, in those early days, would

compare with and equal the high charges of some of our eastern practitioners of the present day. He spent about two hours cleaning and filling the teeth of the wife of a celebrated lawyer in Lockport, Mr. C——. His charges were fifty dollars. Mr. C—— thought that was a most extravagant price, and said so. Bigelow replied: "We professional men must be liberally paid for our services," and would make no discount. The lawyer paid the bill and took a receipt. After Bigelow had left the village, the lawyer happened to remember that, in a business transaction with some parties in Buffalo, he had taken a mortgage on some real estate there, given by a Dr. Bigelow. He overhauled his mortgages and found this was his man, and that the mortgage was long past due. He set about an immediate foreclosure of the same, in the most expensive way known to the legal profession. Bigelow hurried down and expostulated. He thought the fee demanded was extravagant and extortionate, but Lawyer C—— replied: "We professional men must be very liberally paid for our services."

Bigelow once did some work for a lady who said that her husband was a great showman, and he thought that his chance had come to make a strike. He improved the opportunity and charged a big price, which was paid, and a receipt taken. In a short time the man opened a museum, and in advertising his curiosities, after enumerating a lot of rare things, he said: "The most rare and extravagant thing in the whole collection is a 'Dentist's bill receipted.'" And there, sure enough, in a big tin frame, suspended by a chain to a post, in the most conspicuous place in the museum, was Bigelow's bill for dental services for wife. It was a wet blanket for Bigelow, and annoyed him excessively. He finally got a friend to go and buy the thing, paying about the same for it that he had charged for dental services.

About 1844, the late Dr. O. W. May had made a gold plate with six teeth, for a man by the name of Easton. The gums had settled away, the clasps had broken and the plate was loose, and it dropped down when in conversation. Easton had become offended with May, and took great delight in showing the work. He would say, "There is a specimen of Dr. May's work," and then would wobble them up and down. He would not let May touch them, and they were really a very bad advertisement. May said to me one day, "Doctor, I will give you twenty dollars if you will get those teeth

out and make him a set." I agreed to try. A few days after I happened to meet the old gentlemen, and he showed me how the teeth wobbled. I said to him, "They are not much comfort to you?" "No," he replied; "I stick to them to annoy May, but I am tired of the fun. What will you charge to make me a set that will fit?" I agreed to make them for the old plate and twenty dollars. He came to my office. I took an impression and made him a set that proved satisfactory to him, and he paid the bill. In a couple of weeks I met Dr. May, who said: "I see you have got the old teeth out of Easton's head; here is your twenty dollars." I took the money and said to him, "Here is your old gold plate and teeth; I guess all parties are perfectly satisfied; at least I am." I think that was the only time I ever received a double fee for making a set of teeth.

Dentists in those early days used to visit the surrounding towns and villages a great deal more than they do now. I remember visiting my old stamping ground, Lewiston, and was told that another dentist from an eastern city had come there the day before, had taken rooms and was going to open an office. I got up early the next morning, and took a stroll down to the Niagara River, and as I was returning I saw a man tacking a card on Bartlet's store door. Just then a well-known citizen came along, saw the card, shook the door, and yelled out: "Get up, Bartlet; the sheriff is advertising your premises." The new dentist, Dr. M., replied: "That is not a sheriff's notice; it is a dentist's advertisement." At that the man seized and shook the door more violently than before, crying out at the top of his voice: "Get up, get up, Bartlet, the dentist is advertising your whole real estate." Dr. M. stole away, looking sheepish. In the afternoon I called at his rooms and found him packing up. He said that was no place for him; if he stuck up a card they said he was advertising their property at sheriff's sale. By the way, that dentist has since made his mark in the profession, and is a splendid operator, and an ornament to the profession. He does not as easily get discouraged at a joke now.

There is not now as much ignorance and superstition among the mass of people, relative to the teeth or practice of medicine, as there was forty or fifty years ago. It was not an uncommon request then for our patients to ask us not to touch their teeth with our fingers after extraction, but to roll them up in paper for them. I some-

times had the curiosity to ask what was to be done with them, and was told they were going to bore a hole in a sweet apple tree, put the tooth in and plug it up. Others were going to take the tooth and go out to the woods, turn their backs, take three steps, and throw the tooth back over their heads and say: "Good-bye to toothache." Others were going to burn them, and scatter the ashes to the four quarters of the earth, and in that way get rid of the toothache, but I judge these were of little effect, for I have extracted teeth subsequently for the same persons.

The old superstitions have not entirely died out, and are practiced yet, as witness the carrying of a small potato or a horse-chestnut in the pocket to ward off the rheumatism, or cutting the finger nails only on Friday, to prevent headache, or avoiding the beginning of a journey, or the building of a house, or the commencement of a set of teeth on Friday.

We used to have a great deal of trouble with our porcelain blocks of teeth; they were sure to break, if dropped while carelessly handled. I remember a block of upper teeth put in for the Rev. B—, in one of the neighboring villages. He was in the midst of a morning sermon, and was describing Saul on the road to Damascus. In quoting the passage, "Saul, Saul, why persecutest thou me," he leaned over the pulpit, when his teeth dropped out and fell on the table below and broke in three pieces. He looked down at the wreck and exclaimed, "My friendth, you thee the fixth I'm in—Amen."

He went home and wrote me of his trouble, desiring me to come to him immediately. I did so the next day, and made him a new set. He was always lecturing me for not being a member of a church, and while at dinner opened on me again. I remarked that it came with ill grace for him to reprove me when he was guilty of transacting and writing business letters on the Sabbath. He denied the charge, and I produced his letter to me, dated on Sunday. His wife remarked, "Now, Father, you had better dry up."

The Rev. Glezen Fillmore, than whom no purer, better man lived, was pastor of a Methodist church then located on Walnut Street. He wore a set of teeth on silver plates, made by Dr. Hains, of Rochester. The plate had cracked between the central incisors, had been soldered, but was giving out again. There was a revival, and at the morning service the church was well filled. I happened to be in attendance, as usual. He was saying, "The spider's most at-

tenuated web is cable when compared to the thread on which hangs the life of poor mortality." Before he got half through the sentence the crack in his plate opened, the solder came off and the words whistled out as though he had a toy tin whistle in his mouth. Everybody was convulsed with laughter. He stopped and sucked away at them, but there was no improvement. "We will turn this morning service into a prayer meeting," said he; "Bro. P—, will you lead in prayer?" He retired to a back room, and directly one of the members tapped me on the shoulder, and said that Mr. Fillmore wanted to see me. When I arrived in his presence he declared that I must accompany him to my office and mend the teeth. I went with him, took the teeth in hand, and he took my bible—I had one in my office, as all well regulated dentists should—and studied out another sermon. I got the teeth mended and in his mouth just as the bells were ringing for evening service. "Now come over and I will give you a first-rate sermon," said he. I did so, and was well pleased that I had done a creditable job in dentistry, and I had no idea that so good a sermon could emanate from my office. Some members of his congregation afterwards suggested that he had better visit my office every Sabbath morning.

The most remarkable case of wearing a dilapidated set of teeth I ever knew, was that of a maiden lady, Miss F—. Dr. Thos. Harrison had made her an upper and under set on porcelain. By some means or other both plates were broken in the center. When I saw her she was wearing the teeth. She would take all four pieces in her hand, put them in her mouth, and with her tongue adjust them to their proper place in less time than I can describe it. It was amusing to hear her talk, as the blocks would rattle and knock together. The ends were worn smooth and rounded off. When she died the teeth were placed in her mouth and buried with her. Don't let any one desecrate her grave in hopes of securing a valuable dental structure.

A few years since, I made a partial denture for a Mrs. L—, a German lady. Every little while she would bring them to me with the left lateral incisor broken. I could not account for it, as she had no antagonizing teeth on the under jaw. I said, "Mrs. L—, I cannot understand this. How do you break that tooth so often?" She hesitated a little, but finally said: "Well, I let Susan wear them when she goes to a party or dance, and she is the one that breaks that

tooth off." That explained the mystery. I had made a partnership set of teeth, to be worn by the mother and broken by the daughter. This was the only case I ever knew in which a partial set of teeth could be used by two persons. I finally made a set for the daughter, and had no further trouble with repairing the mother's teeth.

NOTE.—This paper is a continuation of the one published in this journal for December, 1884. Dr. Bristol is now the Father of the Profession in Western New York. He is, and has always been, an original character, and much of the interest that is felt in his personal narrations is due to his inimitable manner of relating them. Unfortunately, this is quite lost when they are in print. He is full of anecdotes of the early days, and the societies before whom this and the paper of last year were read, by unanimous vote requested him each year to furnish a chapter of his recollections. In promising compliance he said that he belonged to another generation. His old friends and former companions had passed away. Whitney, Hayes, Snow and others, were no more, and he felt

—— like one who treads alone
Some banquet hall deserted;
Whose lights are fled, whose garlands dead,
And all but he departed!

—EDITOR.

HYDRO-CARBON FURNACES FOR DENTAL OPERATIONS.

BY DR. C. H. LAND, DETROIT, MICH.

To be able to fuse the body and enamel of which artificial teeth are composed, in an easy and convenient manner, is a thing the profession has studiously sought after, realizing that, when properly accomplished, the means to elevate prosthetic dentistry from an ordinary mechanical enterprise to one of true art, would be at hand. The mere construction of a furnace after the usual modes has been simple enough, and the question of securing the necessary degree of heat was long ago accomplished. However, the ideal furnace demanded much more. It must possess, not only the capacity of a coal or coke fire, but also accomplish the work in less time, and require but the minimum amount of exertion to operate it. Of the many attempts to produce such, nearly all have failed, owing to technicalities that were not well understood.

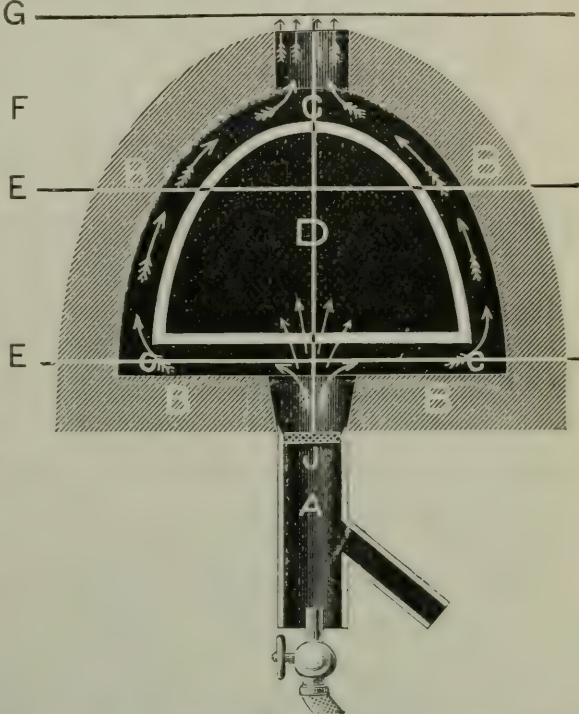
After many experiments, and their accompanying failures, it has been demonstrated that to heat an eight-inch muffle, three and one-half by two and one-half inches in diameter, to over 2800° F, represents about a one-man power, equivalent to the exertion of running the ordinary foot-lathe, or the No. 9 bellows, as manufactured by the Buffalo Dental M'fg. Co., which gives a working pressure of

one and one-half pounds to the square inch, and corresponds exactly to the required amount of air pressure and volume necessary to heat an eight-inch muffle to 2800° F. Therefore, to make a furnace larger would require too much power, and one smaller would not do for large pieces of work. In the production of a suitable furnace, the whole working apparatus must be as nearly air-tight as possible, and the supply of gas and air must be easily controlled and well balanced, with the least amount of friction in the passage through the pipes. These, with many minor details, form the basis of a practical gas furnace.

GASING THE BODY AND ENAMEL.

The most serious trouble with all gas furnaces, has been the extreme liability of injuring the body and enamel by what has been commonly called "gasing." The accompanying illustration will make the philosophy of combustion more clear, and give the reasons why teeth are injured. A, represents the burner; B B B, fire-brick lining; C C C, combustion

chamber; D, interior of muffle. The arrows indicate the direction of the blast. The space in the combustion chamber between the lines E E, is where carbon monoxide is formed, a gas containing one equivalent less of oxygen than carbon dioxide, simply an imperfect state of combustion. It is this gas that injures the body and enamel. By reference to the illustration, it will be seen that the little arrows are made to appear



passing through the pores of the muffle, and as the direction of the blast from the burner A is directly against the bottom of the muffle, with a pressure of one pound to the square inch, a portion of the carbon monoxide is extremely liable to be forced through its

pores, and will be taken up with the body during the first and second biscuiting, here to remain until the enameling process, and as this takes a much higher degree of heat, it causes the gas to be eliminated, as shown in the numerous small bubbles on the surface. The space between the lines E E, and within the combustion chamber C C C, should be known as the first stage of combustion, where a certain portion of carbon monoxide is always present, and the space F, between the lines G and E within the chamber C, should be known as the second stage, which is perfect combustion. In the first stage of combustion one equivalent of oxygen from the atmosphere unites with the hydro-carbon to form carbon monoxide; in the second stage, two, or perhaps three, unite to form carbon dioxide, or carbonic acid. Perfect combustion is always at the extreme point of the blow-pipe, as shown in the illustration.

The attempt, therefore, should be to place the muffle as nearly as possible in the centre of perfect combustion. As carbon monoxide is not consumed short of a temperature of over 2200° F, the teeth should be kept in front of the muffle until it approaches a white heat. Starting from a cold muffle this will take about twelve minutes, and they should be gradually carried to the extreme end. At a high temperature there is very little danger of gasing, unless a greater quantity of gas is supplied than the furnace is capable of burning. Having constructed a furnace, and being familiar with many other details that provide a means to overcome all the apparent difficulties, the success of properly baking teeth seemed to be assured, until the muffle began to crack, which usually started in the second or third enameling heat. This let in such a quantity of the monoxide of carbon as to ruin the teeth. Here was a difficulty that was overcome by forcing a quantity of superheated air into the muffle, and backing all foul gases out. This proved to be a cure for gasing, but added an excess of oxygen, and it was found that this had a tendency to bleach the gum enamel to a lighter shade. The next step was to inject a pure atmosphere of nitrogen into the muffle, it being a neutral gas, not uniting radically with anything. This was eminently successful, and thoroughly demonstrated the fact that porcelain baked in an atmosphere of nitrogen was absolutely perfect, both in color and texture. It therefore gives me pleasure to be able to announce to the profession, that the baking of all kinds of porcelain with any of the hydro-carbons has been brought

within the range of every dental practitioner, so that with a little experience and knowledge of the above facts, artificial teeth can be baked, with unerring precision, in a very comfortable, cheap, and easy manner. By a simple attachment, each furnace produces its own nitrogen as fast as needed, and with recent improvements in the construction of muffles and the aid of a small motor, the author has been able to maintain a constant and uniform temperature above 2800° F, by which a slab of sectional gum teeth was completed every seven minutes, at the will of the operator.

OLEFIANT GAS AND GASOLINE.

Olefiant gas, with which nearly all our cities and towns are supplied, is a compound of hydrogen and carbon. Its symbols are $C^2 H^4$, differing from gasoline only in its specific gravity, the composition of the latter being also $C^2 H^4$. The former will rise to the top of a building, while the latter will fall. The former is more penetrating, therefore more liable to gas the teeth, and hence requires more care in handling. The quality varies in different localities, and sometimes, owing to the presence of ammonia, it may injure the teeth, or it may be too thin. When properly purified it should be a rich hydro-carbon. The uncertainty of its qualities is frequently the cause of failure. To be successful with gas furnaces, it is absolutely necessary to have a pure and rich hydro-carbon. When the gas pressure is weak, or the quality is poor, a gasoline generator may be attached to the pipe and the current allowed to pass through. This takes up a large percentage of the gasoline, and provides a very rich quality of gas. The eighty-seven per cent is the best; seventy-four per cent. is too heavy to use without requiring heat to vaporize it. By applying to the manufacturers of the Combination Gas Machine Co., a supply can be had. When pure gasoline is used, it is necessary to have a generator so arranged that a portion of the air from the bellows will pass through it. This carries the vapor into the furnace, where it becomes mixed with the proper quantity of air, and will produce as good, if not better, results than any other hydro-carbon. All kinds of crucible and muffle work can be done equally well. Also soldering and brazing with the blow-pipe. One gallon of gasoline costs fifteen to twenty cents; this will bake one set of teeth. Therefore, it will be seen that dentists living in localities where there is no gas, will not be deprived of practically the same advantages as their city brethren.

THE EXTRACTION OF TEETH FOR PARTURIENT WOMEN.

BY GARRETT NEWKIRK, M. D., CHICAGO, ILL.

Some months since I saw an article relating to some one—a lady in Mississippi, I think—who believed that the extraction of a tooth had been necessary for the birth of each child. As it appeared, this idea had the endorsement of her medical adviser and others. The item has been republished in several journals, without any one, so far as I know, questioning either facts or conclusions.

Judging by past experience, in her third labor the lady believed that before it could be concluded she must lose a tooth. The idea took firm possession of her mind. The physician at first declining the extraction, the pains ceased, or became weak and inefficient for six or eight hours. Then, yielding to her solicitations, he extracted the tooth, which we are led to infer was a good one, and the child was born within an hour. Therefore, for some mysterious reason, the extraction of the tooth was the one and only thing required to terminate the labor. Verily, logic is logic.

Let us see. In the first place, when her oldest was born, she may have had an aching tooth, a tooth really diseased and causing disturbance. It is a fact well known to all physicians, that any irritating cause may disturb the rhythm and force of labor pains. Anything which distracts the mind or excites particular attention will do the same thing. The sudden appearance of an attendant, other than the one expected, may block the wheels of labor for hours. So may undigested food in the stomach, a full bladder, a rheumatic joint, a colic, a whim, a grief, a disappointment, or the mere presence of some female whom the patient dislikes. There is no end to the list of disturbing elements that may interfere with the always desired smooth and regular course of labor.

Again, there is nothing more common than the occurrence of "wandering pains." These may be in the limbs, not infrequently with cramps; also in the stomach, in the nerves and muscles of the trunk, as well as in the head and face.

After the first and second labors, nearly every woman has some positive notions of her own about herself, all rooted and grounded. That which was done in a former labor, when things turned out

well, must be done again. The parturient woman is wrought up to a high pitch of mental and nervous tension. She is usually very positive, and exacting to the last detail. No queen could be more imperious, and she brooks no opposition. She is no respecter of persons, nor of opinions that conflict with her own. She is in a hurry to get through, and has no time for nice arguments and distinctions. Whatever real or fancied good she has experienced from an act in former times, she requires again. Right or wrong, she demands it, and refusal chafes and frets her. There may be nothing in the thing she wants, but give it to her and she is satisfied.

In the case cited, there was a woman who knew a tooth had to come. Opposition chafed her, and perhaps from mental disturbance alone, pains were weak for hours. Quite likely, too, the delay was more apparent than real, nature taking time to relax the circular fibres of the *os uteri*, preparatory to the true expulsive pains of the last hour.

It is not impossible that the shock of the operation may have acted as a nervous stimulant, and excited more vigorous contractions of the womb; so would a shock produced by such other means as sudden applications of heat and cold, or a few smart blows on the soles of the feet and palms of the hands.

But there is no evidence whatever, in the facts stated, to support the theory held, that the tooth, as a tooth, had anything to do with retarding that labor. It was no culprit, but an unfortunate victim, guilty of nothing worthy of death.

SANITAS.

BY E. S. TALBOT, M. D., D. D. S., CHICAGO, ILL.

My opinion of the above liquid having been sought personally and by letter, I consider it best to publicly express it, as others may be interested. I was induced to try its disinfecting qualities from the following remarks of Dr. Harlan, quoted from page 269, *Ohio State Journal* for June: "Sanitas is a disinfectant. * * * Its elements are capable of combining with sulphuretted hydrogen gas and other products of decomposition, and thereby destroying or

removing them." The first quality manifested was its odor, which remained for a great length of time. I made two applications to the root of an incisor, and was unable to treat further, as the patient could not endure the taste in the mouth. I passed a probe into the canal, and the odor of Sanitas was stronger than sulphuretted hydrogen. I suspected that it had not disinfected, but its own powerful odor had covered other odors. I consequently commenced a series of experiments, and think any one may confirm the results if he will do likewise.

I put a small quantity of H_2S (Sulphuretted Hydrogen) in a test tube and added some water, then put a drop of acetate of lead on a strip of white paper and inserted it into the tube, which immediately turned dark. I put a few drops of Sanitas into the test tube, corked and shook it well, and let it remain a few minutes. I moistened the other end of the white paper with acetate of lead, and dipped it into the test tube. The dark color is the same as before, showing that no chemical change occurred by adding Sanitas. There is a little H_2O_2 (Peroxide of Hydrogen) in Sanitas, but it is so stable that it does not unite with the H_2S , and I therefore see no reason why we should keep such an odorous liquid about the office, merely to get H_2O_2 when the same can be procured in full strength, and is a much pleasanter remedy to use. Also upon page 260 of the INDEPENDENT PRACTITIONER, we find "a great many who complain of want of success with Sanitas can only blame their own carelessness." This statement implies that the writer has a knowledge of the article in question, and that those who have been unsuccessful in its use have not the article to blame, but themselves alone. I differ, most decidedly, with Dr. Harlan on this point, and feel that had there been a more thorough understanding of the properties of Sanitas, it would not have been recommended to the profession as a disinfectant.

CROWN WORK AND ENGLISH TUBE TEETH.

BY DR. LAWRENCE VANDERPANT, ORANGE, N. J.

The interest created by the publication of my two articles on this subject is certainly wide-spread, if not universal, for I have had cor-

respondence from remote places, the existence of which an ordinary map does not reveal. My reply has been a postal card with the intimation, "*Vide* next number of the INDEPENDENT PRACTITIONER," so I will now crave a short space.

1st. A puzzling error occurs in the November article, page 583, first line: for "pickling" read "pitching," and the context will explain the meaning of the term; it is an old and ordinary laboratory one.

2d. As a general reply to enquirers, I will briefly epitomize the matter as regards crown or pivot work.

(a.) Tube teeth are not capable of universal application, even as regards the incisors and cuspids; in rare instances they will be too thick to articulate.

(b.) The object of trimming the portion of the pin to be affixed to the root, is that a union may be formed with the amalgam used for securement.

(c.) It adds materially to the value of this work to slightly screw the pin into the apex of the cavity, as by so doing the pin can be accurately bent to requirement; it will maintain its position during the plugging of the amalgam, and it will not draw in the final adjustment of the tube tooth-crown.

(d.) The Herbst method is advantageous in filling the root. An appropriate instrument will suggest itself, as for example, a thick broken needle.

(e.) A solution of gutta-percha, with the floss silk, will make a good cement to fasten the tube tooth to the pin.

(f.) The composition (the body) of the teeth of Messrs. Ash & Sons is so much denser, harder, and stronger than that of other descriptions, that they can be reduced, for necessary articulation, to a very considerable degree, by grinding, and will still possess the solidity requisite for practical purposes.

The possession, on the part of the operator, of a small mental capacity to conceive, and a great deal of skill to execute, will add materially to success in this, as well as in many other dental operations.

Reports of Society Meetings.**AMERICAN DENTAL ASSOCIATION.**

TWENTY-FIFTH ANNUAL MEETING, HELD AT MINNEAPOLIS, MINN.,
AUGUST 4, 5, 6, AND 7, 1885.

REPORTED FOR THE INDEPENDENT PRACTITIONER BY "MRS. M. W. J."

(Continued from page 651, Vol. VI.)

THURSDAY MORNING SESSION.

Dr. Frank Abbott—Wished to say one word with reference to the Herbst method, as he had had a little experience. The INDEPENDENT PRACTITIONER had published illustrations of his set of instruments. It was impossible to get into all cavities with straight instruments, while the proper curve would admit of doing a hundred things that could not otherwise be accomplished. The object of his new curved shapes was to get into undercuts. It is not safe to depend entirely upon the Herbst method. The rubbing process, without annealing, will not give sufficient cohesion to resist, where there is any purchase. A filling made with the electric mallet, and annealed red hot all the way through, will not break apart. He remarked that nothing had been said in the discussion, of the bridge-work of Dr. Parmly Brown. He was well pleased with the specimens he had observed, both in the hand and in the mouth. It was the finest he had yet seen, admitting of close adaptation to the gums all around, creating no irritation and admitting of restoring the perfect shape of the teeth in the mouth, a great advantage in talking.

Dr. W. H. Morgan—Said there was one absolute essential to success in the insertion of artificial crowns, and that was the proper medication and treatment of the root. Success depends more upon the healthy condition of the root than upon the manipulation of the crown. It is well to lay especial stress upon that point, for he had removed beautiful crowns that had been built upon teeth of which the pulp-chamber had never been opened. Of course periostitis had followed. Another point in regard to impacting gold: every angle made in the foil previous to placing it in the cavity requires that much more pressure in compacting. If there are a hundred angles in the pellet it may require a pressure of one pound

to flatten it out; if there are a thousand angles it will require ten pounds' pressure. Gold, in the best form, has smooth surfaces; not crumpled up with a thousand angles to break down. Some one said that a filling should be perfectly solid, but there are cases when to be solidly compact throughout is a disadvantage. Where there is no room for expansion, thermal changes will break down frail edges. Hundreds of teeth are now saved that the fathers would have condemned to the forceps; they are saved by our new methods and new materials. He would use matrices in certain localities, but not everywhere. It was said that the matrix made simple cavities in all cases, but this would not always be an advantage, a compound filling being sometimes easier than a simple one.

Dr. Allport—I desire to make an explanation. My friend McKellops said that I annealed my gold and used the mallet, and *therefore* I used cohesive gold. I desire to say that the larger part of the gold that I use in the filling of a cavity is non-cohesive. When I build up outside of a cavity I use, as all dentists do, cohesive gold. But I will explain how I use my gold, so that no one need misunderstand me. Suppose I make a retaining point—which I seldom do, but which those who use cohesive gold are usually obliged to do—no man can fill the retaining point as perfectly with cohesive as with non-cohesive gold. I do it in this way: I take a little pellet and anneal a small point; then I put the non-cohesive portion down into my retaining point and fill it perfectly, leaving the cohesive portion on the surface; then take another piece in the same way, putting the non-cohesive point of the second pellet on the cohesive point of the first, every time. With this little point of cohesion there is no danger of the second piece tumbling off, or rolling about in the cavity. The greatest part of my filling is, therefore, of non-cohesive gold. My friend seems to think that because I use the mallet I must use cohesive gold exclusively. In this he is entirely mistaken, for I introduce the gold, in nearly all my operations, with mallet force. I only use hand instruments and hand pressure in those locations in which it is difficult to make perfect operations with mallet instruments.

Dr. W. O. Kulp—This is a mixed discussion, and I am going back to bridge-work again. It is an old saying that the proof of the pudding is in the eating. It is the same with bridge-work. I wear it myself, and speak whereof I know. I had the misfortune

to lose a molar and a bicuspid, and tried twenty different plates and appliances. Later on I lost a lower molar on the other side. I could not masticate on one side with my artificial appliance, nor on the other side because of the lost molar. The other molars began to abrade, and the front teeth to push forward and become sore. My attention was directed to what we call a quack advertisement of bridge-work. I concluded to beard the lion in his den. I wanted my jaws separated somewhat, to save the front teeth. I had the bicuspids and molar capped, and a bridge put in to supply the lost teeth. On the other side I had the molar capped, and the inner cusp of the bicuspid taken off. My powers of mastication are fully restored, and I have worn the work for two years with entire satisfaction. When front teeth are abraded, separate the jaws with caps.

Dr. J. J. R. Patrick—I hold it man's first duty to know what the material is that he is using. We hear the terms adhesive, and cohesive, and non-cohesive, and these create some confusion. All gold is cohesive if good, where there is nothing to interfere with one molecule coming in absolute contact with another. There are many different names for gold, but they are merely commercial names. One molecule interlocks with another, and they become homogeneous. When adhesive, something intervenes and prevents the unity of molecules. Non-cohesive seems to mean adhesive—brought together, and held together like two pieces of wood glued with mucilage. We have spent much time in discussing the Herbst method. It serves a purpose and teaches us how to do better. I cannot see how we can get cohesive results as well as by the direct blow. If gold was of the same character as butter, it might be done. We must have direct percussion to drive the molecules into each other.

Dr. Dyer—Gold is adhesive when absolutely pure; passing it through the lamp makes it pure by destroying any film of extraneous matter, and makes it cohesive also. Adhesiveness means adhering to some foreign body; cohesive is where the particles of gold unite when brought together. Cohesive gold is very soft, but so-called "soft gold" is not as soft as cohesive gold when passed through the lamp.

Dr. W. B. Ames—Said that he was an advocate of eclecticism in practice. But he could not see the consistency of putting a soft mass in the bottom and using the mallet to condense the surface. By using

non-cohesive gold, by hand or mallet pressure, we get a solid foundation on which to use the electric mallet for finishing the surface. What objection is there to the mallet? Why depend on welding? What difference does it make, provided that it is made solid? When should we use the mallet and when not? In putting gold in inaccessible points, he was in favor of hand-pressure as giving better command of the instrument, whether using cohesive or non-cohesive gold.

Dr. J. Taft—Said that Herbst did not stand alone in his method. In 1881, at the International Medical Congress in London, in the dental section, he saw specimens of cavities lined by Dr. Blount in the same manner, with a smooth, pointed instrument. It was like pasting gold upon a smooth surface. The smooth walls were lined with non-cohesive gold in this manner, and the contour finished with cohesive gold; the lining was very perfectly done and was much admired. The advantage claimed was the thorough adaptation to the walls, better than by any other method. No one could doubt, after seeing the specimens and witnessing the operation, that it possesses some advantages over all other methods. The principle of the Herbst Method is that of a lining, all over the walls, of soft foil, introduced with smooth points with a rotary motion. The centre can then be filled up with cohesive gold. As to the use of the matrix—*Dr. Daboll* says that all young men should use the matrix in every case of approximal fillings. This must be taken with considerable caution, as it is liable to mislead. *Dr. Daboll* said that the use of the matrix reduces all proximal cavities to simple crown cavities. There are some points, in filling with the matrix, which are not common to crown cavities, as in the adaptation to cervical edges, and to the lateral borders all the way up. Where the matrix comes up square against the cervical border there will be a deficiency at that point, unless the greatest skill is exercised and the very finest instruments used. It requires more skill than is possessed, except by the very few. He would not advise the use of the matrix except where absolutely essential. The matrix will not fit up to curved cervical borders. *Dr. Patrick* has said no man ought to use a thing that he did not know all about. If that was the case we must all go to school.

Dr. C. W. Spalding—Wished to ask one question. *Dr. Taft* had said *soft foil* and then corrected himself, saying non-cohesive. He would like that point explained.

Dr. Taft—The terms soft and non-cohesive are carelessly used as interchangeable. Sometimes gold is quite soft, like butter or cheese, yet it will weld. All depends on the management of the gold in its preparation. Those who have worked gold know that there is a great variety of behavior in gold, as in any other metal. Variety may be given by the manner in which it is treated. Pure gold is always the same in quality, but temporary qualities are given to it by the method of treatment.

Dr. Brophy—Said that when gold was submitted to fumes of aqua-ammonia it became non-cohesive. He had no choice in buying one rather than the other. If he wanted it cohesive he annealed it; if he wanted it non-cohesive he placed it in a drawer where it was exposed to the fumes of ammonia. He said that he had had no experience in constructing bridge-work, but he had examined the work of others. It claimed to be something strong and simple, supplying missing teeth without a plate. But what he had seen was anything but satisfactory, in his judgment. For one or two teeth it might serve a very good purpose for a certain time, but for four or five teeth—say the first molar and two bicuspid even—it would soon result in failure. It was not possible to secure absolute adaptation of the teeth. There would sooner or later be a space in which secretions would accumulate and become exceedingly offensive, destroying the adjacent teeth. He would rather be without several teeth than wear such bridge-work as he had seen. In the adaptation of incisor teeth there must be gold visible in bridge-work. Why not have a gold plate? It would serve a better purpose. The bridge-work would, in a few years, result in the loss of the teeth to which it was attached.

Dr. W. P. Horton—Said that the present discussion of operative dentistry seemed to cover the whole field of practice. It had been said that the old methods saved as large a proportion of teeth as was saved at the present time. He believed that though the old fathers had but little light, they worked up to the light they had. The introduction of adhesive foil has added to the light, so that hundreds of teeth are saved now to one filled then. Teeth that formerly were doomed to the forceps were now saved. Herbst does not stand alone in his method. Blount gave his instruments a rotary motion, not rapid, but rotating sufficiently to carry the foil to the cervical walls. No man can succeed thoroughly till he

has a knowledge of all methods. Combine the various systems with sound judgment. The head, hand, and heart must all be educated in this work.

On motion, the subject of Operative Dentistry—Section IV—was passed.

A communication was received from the Superintendent of Memorials for the Central Woman's Christian Temperance Union, asking the adoption of the following resolutions:

Resolved.—That we recognize and commend the excellent work done quietly, but systematically, by the Woman's Christian Temperance Union.

Resolved.—That we endorse its movement for temperance education in the public schools; its proclamation against the use of alcoholic stimulants, and the efforts it is making to educate the people in regard to the laws of Hygiene and Heredity.

Resolved.—That as a body of practitioners, for the purpose of developing a moral feeling throughout the country, and as having a direct influence for good upon all classes, we will discourage the use of alcoholic stimulants in our practice.

Respectfully submitted.

Dr. C. N. Pierce, moved the adoption of the resolutions.

Dr. A. T. Smith, moved that they be so amended as to include the use of tobacco.

Dr. C. W. Spalding, moved that they be laid on the table.

Dr. W. C. Barrett, seconded the latter motion, saying that he did this, not with any intention of discourtesy, but because it was a matter entirely foreign to the objects of the association—to the practice and science of dentistry.

The motion to lay on the table was carried.

On motion, adjourned to 3 P. M.

THURSDAY AFTERNOON SESSION.

The President in the chair.

On motion of Dr. A. W. Harlan, Surgery was added to Section VI, no special provision having been made heretofore for papers for discussions on that subject.

On motion of Dr. Barrett, Section V was passed, and Section VI called.

Dr. A. W. Harlan, chairman, reported a paper from Dr. J. D. Patterson, entitled "The Catarrhal Nature of Pyorrhœa Alveolaris,"

and one from Dr. Wm. H. Atkinson, on "Pyorrhea and Sponge Grafting," also his own written report as chairman of the Section.

Briefly summarized, Dr. Harlan said that there had been few discoveries in dental pathology, during the past year, of sufficient significance to be placed on record, the most momentous being the researches of Prof. Miller, of Berlin, the vast import of which was not yet appreciated or understood. He had not been able to complete his report on Pyorrhœa Alveolaris, and asked for further time.

It is important that we be able to extend the list of remedies; the most valuable and interesting drug added during the past year was Cocaine. His conclusion, from his own experience, was that Cannabis Indica was vastly more efficacious than any form of Cocaine; that the former would obtund the most sensitive cavity, while painting the gums with the fluid extract renders them absolutely insensible to pain; an exposed pulp was anæsthetized in from five to ten minutes. By saturating the gums, extraction is rendered painless when done with warm forceps dipped in the tincture. He had not had good results from Cannabis Indica in pyorrhœal pockets. The antidotes were the same as for Opium.

Resorcin and Terabin were two new remedies, as yet not generally appreciated by dentists. Resorcin was a valuable substitute for carbolic acid, being neither poisonous nor escharotic, except internally. Terabin—transparent and limpid, and a ready absorbent of oxygen—is stimulating, disinfectant, and antiseptic, and in closed abscess it destroys all foul odor when used as a dressing for the mal-odorous root-canals. It has no obtunding qualities. Its antiseptic merits are undoubted.

Dr. Davidson—Said where he had failed with hydrochlorate of cocaine, he had succeeded perfectly with cannabis indica. He described a case of caries of the lower central incisor, running to the margin of the gum and very sensitive. He applied the dam and cannabis indica, and with the engine removed a large portion of dentine without any complaint from the patient. On the first symptom of pain he again applied the remedy, working on another tooth for a few moments, when he returned to the central incisor without warning to the patient, and it was all right again.

Dr. A. W. Harlan—Said that he had not been able to obtain as good results from cannabis indica as from cocaine; that the preparations of cannabis indica were very uncertain, and he could

get no two supplies alike. One would act beautifully, while from another the results would be *nil*. Even from the samples given out that morning, he could get no results on the tongue. It produced no effect on sensitive dentine, but left a peculiar sensation in the teeth for thirty-six hours. He had had many cases of pyorrhœa that he could not attribute to local causes, but that were probably of constitutional origin, as in patients of rheumatic or gouty diathesis, or suffering from glucosed urea, Bright's disease, etc. In such cases local treatment had been of no avail until the physician had mitigated the disease, when the pyorrhœa was also better. The same was true in the case of ladies with uterine troubles. In these cases there would be pyorrhœa without deposits, and all local treatment vain until the patient was successfully treated by the gynæcologist, when there would be corresponding improvement in the mouth.

Dr. J. D. Patterson then read his paper entitled "The Catarrhal Nature of Pyorrhœa Alveolaris." This essay was an elaborate study of the comparative pathology of Pyorrhœa and Catarrh. He said that Catarrh was distinctively an inflammation of the air passages, distinguished as nasal, pharyngeal, laryngeal, bronchial, etc. That the exudations changed from watery to pus and blood, the serous effusions being irritant and excoriating; that it was exceedingly infectious, adjoining parts being promptly affected. Its further stages were inflammation, destruction of function, formation of crusts, decomposition, and ozæna; the formation of deep and penetrating ulcers producing necrosis, with bony deposits and osseous formations under the crusts. These catarrhal phenomena, affecting the cavities of the upper jaw, strongly resemble those of pyorrhœa, in the inflammation of the gums, exudations of serum, pus, and blood, the destruction of the ligaments of attachment, the deepening pockets, the calcareous deposits, and the absorption or necrosis of the septum and alveolus. Careful attention was directed to the similar pathology:

- 1st. In the similar affection of the mucous membrane.
- 2d. The identical character of the effusions—purulent serum, pus, and blood.
- 3d. Its infectious character, affecting adjoining teeth in pyorrhœa as it does adjacent parts in catarrh.
- 4th. The similar burrowing of pus.

5th. The destruction of periosteum and bone.

6th. The similar deposits—that of pyorrhœa being familiar, the osseous deposits of catarrh being also fully described by authors, as in Ziemsen's Medical Encyclopedia, where the chalky deposits and bony concretions of catarrh are described.

These points of similarity lead to the conclusion that the two affections are similar in origin and in nature, catarrh being a disease of the air passages, and all tracts to the lungs being liable to contamination, while pyorrhœa is the result of local contamination from nasal drippings, or from poisonous sputa lodging around the teeth, or, in case of mouth-breathers, originating in the gums as readily as in the nasal passages. Dr. Patterson said that he had made a special study of twenty-four cases. In many instances, where catarrh was denied, it was found present, and his observations had confirmed his theory in every case. The patient may be ignorant of and deny the presence of catarrh, even when hypertrophic and fetid symptoms are readily recognized by others.

Dr. Thompson—Said he had had a case of pyorrhœa in a patient whose habits were not cleanly, and whose teeth were very bad. He had also a very offensive case of catarrh, but had never had any treatment. He prescribed preliminary treatment for the catarrh, with salt water douche, etc. The improvement in the catarrh resulted in marked improvement of the pyorrhœa also. The blending in pyorrhœa of most of the symptoms of catarrh suggested that when pyorrhœa was present there was also nasal catarrh, and he found this invariably confirmed by the physician. He had investigated, after the suggestion of its renal origin, but could not trace it to that source. He said that Dr. J. G. Templeton claimed wonderful results from the application of copper sulphate—blue stone—in the pockets once a week. That he had considerable experience in the use of cocaine, meeting with some successes and some failures—success in perhaps sixty or seventy per cent—but that it was impracticable in many cases, requiring too much time to produce its results. Neither he nor his patients could afford to wait twenty minutes, and then twenty more. By taking full time the desired result could doubtless always be secured; it was reliable, but the time required made it impracticable.

Dr. King—Said that he had some experience and some success in the treatment of pyorrhœa. Having kept a record of the

history of a large number of cases, with the constitutional history of each patient, his experience failed to confirm the theory that the disease was due to an impoverished condition of the blood, at least fifty per cent being people in good health, with robust, vigorous constitutions. He considered that calcareous or ceruminal deposits were the immediate cause of the disease, though there was, of course, something back to cause the deposits. If this was not so, why was it so essential to remove all deposits? Why insist on keeping the teeth free from subsequent deposits to prevent the return of the disease? In cases where no salivary deposits are present, it will always be found, on tracing the case back, that it had been the initial trouble, though the system had so changed, more recently, that the deposits were not continued, but the track was there.

Dr. Ingersoll—Wished to correct a statement which had recently appeared in the journals, as quoted from Dr. Rawl's paper on Pyorrhœa, where he (Ingersoll) was represented as saying that the gathering of salivary calculus was the cause; it was never the cause, but uniformly the result.

Dr. Friedrichs—Wished to inquire whether there were any recognized cases of calculus without pyorrhœa? He had had one case where there were considerable deposits which the patient would not allow touched, and which he said had been unchanged for twenty-five years. The gums were of healthy, natural color; no pus, no inflammation; the alveolus very thin.

(TO BE CONTINUED.)

AMERICAN DENTAL SOCIETY OF EUROPE.

THIRTEENTH ANNUAL MEETING, HELD IN BERLIN, AUGUST, 1885.

REPORTED EXPRESSLY FOR THE INDEPENDENT PRACTITIONER.

(Continued from page 655, Vol. VI.)

Dr. Miller delivered an address, accompanied by illustrations, on some phenomena connected with caries of the human teeth and their explanation. The following is a brief summary: The speaker asked indulgence of the society in presenting so repeatedly a sub-

ject of this nature, but having started out on a certain path he thought it best to follow it to the end. He compared the human mouth to a wilderness, in which such a variety of agents and conditions are present that, until they are separated and the action of each one determined individually, it is an utter impossibility to come to a safe and certain conclusion as to which of them may be evil, and the active agents in the production of the various diseases met with in the oral cavity. He referred more particularly to the numerous fungi in the oral cavity, of which he himself had isolated no less than twenty-five different kinds.

The method of obtaining pure cultures was clearly explained by the following simile: "Suppose we have a hand full of seeds of various kinds — wheat, rye, barley, oats, corn, etc., etc — and that the separate grains are invisible to the naked eye. How can we separate these different seeds so as to obtain a number of piles which shall contain seed of one kind only? We should go with the grains to a ploughed field and sow them, and when they have sprung up and brought forth fruit we would gather the heads of wheat into one bundle, the heads of rye into another, and so on, and in this way obtain a number of bundles, each containing grain of one kind only. Now, if we have a mixture containing any number of different micro-organisms, we may effect the separation in exactly the same manner, except that we sow the fungi on nutritive gelatine instead of ploughed ground."

Prof. Miller then demonstrated the method of sowing the fungi in gelatine, and of gathering the different kinds which spring up, into separate tubes, as described in this journal. He called particular attention to one fungus commonly found in the human mouth, which produced large quantities of gas, the gelatine being completely torn to pieces by the same.

He had also frequently met with this organism in the intestines, where it may give rise to the well known disorders accompanying development of gas in the alimentary tract.

He then described a number of experiments made with glass bulbs, representing the crown and root of a tooth. These had been filled twenty-four hours previously with nutrient material, infected with a bacterium which had been found in a gangrenous pulp, and the apices closed. In breaking the points a portion of the contents of the bulb was forced out by the pressure of the gas

which had accumulated in the bulb. He called attention to the fact that an attack of pericementitis with severe pain appears sometimes without any previous warning, and thought that the experiment furnished an explanation of such cases, the gas gradually accumulating in the root until the pressure becomes sufficiently great to force through portions of the pulp by which the apex may have been closed. Potato cultures of a large number of chromogenic micro-organisms were shown, including *Micrococcus prodigiosus*, *Bacillus ruber*, *Saccharomyces glutinis*, etc., etc., also three green and two yellow fungi from the human mouth. He considered it a great mistake to look upon any of these color-producing fungi as the direct cause of the different colors of the carious dentine. These, leaving out of account the discoloration produced by tobacco, etc., Prof. Miller accounts for in an altogether different manner. He illustrated his view of the subject with five tubes, originally containing absolutely colorless transparent culture gelatine. These had all been inoculated at different times with the same colorless fungus.

In the first tube, three weeks old, the gelatine was partially liquified, but still colorless. In the second, five weeks old, the gelatine was completely liquified and of a yellowish brown tinge. In the third tube, seven weeks old, the color was somewhat darker. In the fourth, nine weeks old, it was dark brown; and in the fifth, six months old, the liquid was completely evaporated, leaving a black residue, in color identical with the so-called *caries nigra*, which we see on approximal surfaces where caries had once begun, and later, generally through the extraction of the neighboring tooth, had ceased. There we had nearly every variety of color seen in carious dentine, resulting from the inoculation of a colorless medium by a colorless organism. Cultures of very many micro-organisms, especially of such as liquify the gelatine, become yellowish brown or dark brown in the course of a few weeks. The discoloration is no doubt chiefly due to the action of the products of decomposition upon the culture material.

The following paper was read by Dr. Sachs:

THE HERBST METHOD.

Any improvement which tends to facilitate the operation of filling teeth should be gratefully accepted by every dentist, for prob-

ably no dental work is connected with so many difficulties, demands so much trouble, perseverance, patience, skill and practice, as filling teeth with gold.

It is now some six years since Mr. Herbst brought his method to the notice of the profession, but, although he spared no trouble to make it generally known, it does not, as yet, seem to have been adopted by many. Even though one occasionally reads in the journals of successes achieved by some of the followers of Mr. Herbst, I must maintain that the value of this method is at present of a highly problematical character.

I base this assertion on an experience of eighteen months. I have spared neither time, gold nor trouble, in order to test the invention most conscientiously, and think I have to-day, after a year and a half, experience enough to pronounce judgment upon it. The principal advantages claimed by Mr. Herbst for his method are:

1. It enables one to operate two or three times faster, while the result equals the finest work insured by any other method.
2. It shortens, in proportion, the pain of operating for the patient.
3. It saves diseased teeth from the strokes of the mallet, and makes filling the cavity nearly or quite painless.
4. It saves us dentists more than half the time, and trying labor.

All this sounds very well and tempting, but unfortunately the conclusion appears inevitable that the above assertions are, for most dentists to say the least, not without error. Though Mr. Herbst is able to make a gold filling with great rapidity by his method, that does not prove that a practiced operator may not, in the same time, fill the same cavity by hand pressure just as well, or even better. Furthermore, I assert that it is impossible to make a large gold filling with the rotation method alone of which the surface will not be defective.

The specimens mounted in plaster, which were sent to the various meetings, cannot be conclusive to an experienced operator, though they may take the fancy of a beginner.

The advantage claimed in No. 3 is only apparent, since teeth with diseased periosteum, which alone can be meant, should not be filled with gold by any method until the diseased condition has

been removed. The rotation method always requires a certain pressure of the instrument in order to condense the gold sufficiently. This pressure, in connection with the friction, frequently generates so much heat that severe pain results to the patient, so that this advantage does not in reality exist; and if Mr. Herbst declares that filling can henceforth be effected with hardly any pain, I remark that not the filling, but the excavating and preparing of the cavity is by far the more painful part of the operation, and against this evil his invention is as powerless as the old systems.

As an especial disadvantage of this method, I must mention the preparation of the cavity necessary in many cases. To suit his method Mr. Herbst often sacrifices sound, useful tooth-substance, which I should by all means try to preserve, for we have not the moral right to mutilate a tooth simply for the sake of making a large, conspicuous gold filling. It is also a great disadvantage that Mr. Herbst nearly always tries to fill approximal cavities of incisors and cuspids from the labial surface, because he is thereby often forced to destroy part of the labial wall, which might be preserved if the fillings were made by other methods.

The advocate of the German method in America, Dr. Bödecker, teaches that it is advisable to condense the surface of the filling with the mallet. Why is this necessary if the rotation method is capable of producing a hard, compact gold filling? Rotation by means of the burring engine alone, seems not to have satisfied even the inventor, for he also uses hand instruments for condensing the gold in the cavity. That these instruments are not furnished with serrations, but have smooth points, only roughened on sandpaper, is nothing new. The vaunted rapidity is often counterbalanced by the fact that most cavities must be changed to so-called central cavities, by means of shellac, pins and other auxiliaries, a preparation which in many cases would require almost as much time as the filling itself. As already stated, I have practiced the Herbst method for eighteen months with great care and attention, as the advantages claimed for it by the inventor certainly sound tempting enough to induce any one to try it for the sake of time and trouble saved, but I could not succeed in producing work which could meet the test which I am accustomed to require of a good filling, neither was I able to save any time.

I have, therefore, reason to take for granted that it is not possi-

ble, by the rotation method, to make a faultless gold filling in one-half or one-third the time required by other methods, and that, too, with considerably less inconvenience to the patient. I, as a German, of course heartily welcome any German invention with just pride, but when one gives it the name of "German method" in contradistinction to American method, it can only humiliate us if it is found out that it neither surpasses nor even equals the methods used heretofore. I think it advisable, therefore, to call the invention the "Herbst Method," all the more as it is the custom to call novelties by the name of their inventor. It is also only just to Mr. Herbst that his priority should be recognized in the name of the method, and just to German dentists that he, and not they, should assume the responsibility of the new method.

Dr. Patton—I have had an opportunity to see Mr. Herbst demonstrate his method of rotatory filling, and must say that it failed to impress me in any way. I could not see the advantage to be gained by it. He cuts away large portions of enamel, weakening the teeth in order to get room to work his rotatory instruments. He picks up his gold with a hand-plugger and presses it into place, then applies the rotatory pressure, burnishing the surface of the gold, and, probably, by the friction of rapid revolutions, causing an adhesiveness. On examination of what I saw, however, the filling was not evenly condensed, and if the last layer were removed it could be pulled to pieces in flakes, which shows that the gold was not really thoroughly condensed.

Now I work altogether with hand pressure, and I fail to see how I can gain time or make a more rapid operation by the new method. I can condense with the hand in the time I take to change instruments, besides getting my pluggers into positions and corners that he cannot reach, and which he himself, when it comes to this, fills up with a hand plugger. I fail to appreciate the method.

Dr. Richter—I have used the Herbst method very considerably, and, having made a large number of fillings in front teeth, I was obliged to remove all of them that did not fall out, on account of imperfections. I sometimes use the method, however, for fillings on the grinding surface of molars, where it works very rapidly.

Dr. Kirschner—Expressed similar views.

Dr. Cohn—Recommended, for rapid work, rolled gold wrapped in No. 4 foil.

Dr. Miller—Being asked for his experience, said: I have been very anxious to find out, if possible, the real value of the Herbst method, feeling it my duty, if the method is a superior one, to introduce it here at the Dental Institute. I was favorably impressed by the results obtained in an examination of a test filling made out of the mouth, but though I had made a few fillings under the eye of the inventor, I had not had sufficient experience in the use of the method to form an opinion as to its utility. I accordingly addressed letters of inquiry to a considerable number of dentists, asking for their experience in the use of the Herbst method. The answers which I received were, on the whole, unfavorable. Some had not used the method, but had seen beautiful work done by it. Some could not see any advantage to be gained by it. Some pronounced it utterly worthless. On the other hand, we have the opinion of Dr. Bödecker, always entitled to the greatest respect, who enthusiastically endorses it. For my own part, I am not able at present to come to a definite conclusion, but if we wait a few more months we shall know. In the meantime, a few fillings carefully made in the mouths of persons who are willing to be used for experiment, will materially aid us in determining what use each of us individually may be able to make of the new method.

Considerable routine business was transacted, and the following members were elected to serve as officers for the ensuing year:

President—Benj. Cohen, Hamburg.

Vice-President—Wm. Patton, Cologne.

Secretary—F. Foerster, Berlin.

Treasurer—Wm. Sachs, Breslau.

The subject of improper graduation in America, which is now receiving so much attention in various parts of Europe, particularly in Germany, was discussed at some length, and the following resolutions were passed:

1. Candidates for actual membership of the American Dental Society of Europe will be required to make the Membership Committee acquainted with the name of the dental college where they graduated, and the length of time engaged in study at the same.

2. Any graduate of the Pennsylvania Dental College, who may apply for membership, shall be obliged to read before the society an essay on a scientific dental subject, in the English language, with satisfactory evidence that he is the author of the same.

FIRST DISTRICT DENTAL SOCIETY OF THE STATE OF NEW YORK.

REPORTED EXPRESSLY FOR THE INDEPENDENT PRACTITIONER.

This society held its December meeting on the 4th ult., the President, Dr. W. Carr, in the chair.

Dr. W. H. Dwinelle referred to statements made at a previous meeting concerning the priority of the use of jack-screws for regulating teeth. He instanced an incident occurring about the year 1845, when a physician was called upon to perform an operation on a farmer who was injured while plowing in his field. During the excitement of the occasion the physician's case of instruments got mislaid. A search for them proved futile, but many months later they were found at some place in the field. Exposed to changes of weather the case became disjointed and the instruments quite rusty, with the exception of an amputating knife, the blade of which was secured to the handle with zinc. The appearance of the knife in so much better state of preservation than the other instruments led him to believe that galvanic action had prevented it from rusting. This suggested the idea that steel appliances could be used in the mouth. The jack-screw, being an instrument capable of great force, could be made of steel and adapted to the use of the dentist in moving the teeth. To prevent it from rusting, it was only necessary to drill a small hole in the appliance and load with zinc. He thinks jack-screws were not used by dentists prior to that period, and indeed could not have been used in the mouth, as they would have become useless from rust.

He also took the occasion to utter a word of warning against the indiscriminate use of cocaine. He said that many individuals used it freely without knowing much concerning its action, and he feared that mischief might result from its use.

Dr. F. Y. Clark—Had heard cocaine condemned and had read accounts of its injurious effects. He had also been anxious to learn if such reports were true, which he seemed to somewhat doubt. He believes it harmless, and has used it over five hundred times, and never with any ill result whatever. He claims that cocaine is now selling for nearly half its cost of manufacture, but soon the price will be high; that parties will take advantage of stories concerning

its danger and make a "corner" of it. He stated that the natives of countries where coca is found have used it freely for many years, and with them it is as common in use as tobacco.

Prof. E. T. Darby, of Philadelphia, the essayist for the evening, was introduced by the President, and produced a paper entitled "Erosion of Enamel and Etiology of Labial and Buccal Caries."

The paper stated that when caries first manifests itself near the gum, beginning with a green or brown stain, showing poor enamel, which readily becomes eroded, it is usually attributed to an abnormal condition of the buccal fluids which, having become acidulated, dissolve out the lime salts and render certain portions chalky. This he denominates "labial caries of childhood." The decay here is white, rapid in progress, appearing as if acids were acting upon the teeth. In such cases, treatment should be commenced as early as possible, and should be both local and constitutional. He would polish the eroded surfaces as thoroughly as possible, have the acid influences modified by the use of lime-water and prepared chalk, administer some preparation of hypophosphite of lime with cod liver oil, and advise plenty of health-giving exercise. For cavities thus formed he would use oxy-phosphate of zinc, which he considers the most suitable, or gutta-percha, which is next in value. Gold he would not recommend, as he believes it the worst material for such cavities. The plastic stoppings he would consider as temporary, and even gold, if used in such cases, would be sure to prove of mere temporary use. The main thing to be done is to arrest the trouble as far and completely as possible, and cases taken in time are easily arrested.

Dr. Darby referred to another condition of decay, found at the cervical border of the teeth, just beyond the termination of the enamel, or close to the margin of the gum. At this point the tooth substance softens or disintegrates, and is easily cut away. This occurs after puberty. It attacks buccal surfaces of molars, and sometimes bicuspid, but is rarely, if ever, found in front teeth. Recession of the gum is the first indication. It cannot be caused by the brush. There must be some other reason. Sometimes, where fillings have been introduced, the dentine disappears around the fillings, leaving them sticking out. He formerly considered this condition due to the action of acids, which dissolve away the surface, the brush removing the parts decalcified, but the highly polished

appearance of the grooves found on the labial surfaces had somewhat changed his mind. Sometimes, most of the enamel surfaces have a gray and wasted appearance, and he wonders if it may not be due to a lack of lime-salts in the system, or a want of better nourishment, or, perhaps an excessive degree of calcification of tooth structure. He thinks the cases of buccal decay referred to are benefited by treating with the galvano-cautery, nitrate of silver or chloride of zinc. He would excavate and fill with gold. This, however, only protects the cavity already formed. If there is, apparently, a lack of lime salts, he would administer preparations of lime.* He considers a too free use of tobacco, especially cigarettes, as tending to aggravate this trouble. Long-standing cases of general debility and nervous prostration tend to induce it. Cavities thus formed must be filled, and if the mischief continues or extends beyond the fillings, larger fillings are needed; yet fillings do not always stay the trouble. Gutta-percha serves a good purpose, but gold is better, and with this material he would build up the injured parts of the teeth. The essayist referred to another kind of erosion found on the buccal and labial surfaces of teeth, and not resembling the cases before described. Very little has been published concerning it, and if referred to, no satisfactory explanations have appeared. Writers disagree in regard to it, and give different accounts concerning it. Tomes says it is not the result of too much brushing, for it is found at points where no brush could possibly reach, and in cases where no brush was ever used; also that grooves are found on the teeth of the sea lion in places where least used. This kind of erosion usually appears after the age of thirty. It begins on the incisors, by a wasting near the gum and the showing of grooves like cuts. Sometimes the entire surface seems to waste. These grooves are frequently highly polished, and yet extremely sensitive to thermal influences and sweets. Sometimes it is only on one side of the mouth, and there seems to stop. It is easier to see it than to ascertain its cause. If acids are used, or generated in the mouth, it does not prove that this condition is dependent on acid, for it is found where the saliva is alkaline or neutral. It does not seem to occur at a particular period. If caused by the brush, it is strange that it

*Rachitis is a lack of lime salts in the bones, in which the trophic changes are much greater than in the teeth. Can Dr. Darby cure this disease by the administration of any form of lime? Can he prescribe *any* course of treatment that may be safely recommended as inducing radical changes in the osseous system?—EDITOR.

is not found all around where the brush passes, and why so many who brush vigorously are exempt. He cited two cases that came under observation, which, in some respects, were similar, yet presenting different features of enamel erosion. Two ladies, of about forty years of age, had been his patients for over ten years. Each possessed good teeth, almost perfect. Both in good health, and neither used acid food. Each with good digestion, but the oral secretions abnormal. Both cases presented bad conditions of enamel erosion, never before suspected, yet commencing at about the same time. The conditions of the enamel and dentine were dissimilar, and the degree of sensitiveness differed.

Dr. Dwinelle—Remarked that the problem was still unsolved, and that the paper left it the same. He has endeavored to solve it many times, but had never succeeded. He referred to the case of a gentleman with teeth eroded across their cervical borders, and grooved as if done with a file, and highly polished. Within a year the grooves had extended to the pulp canals of several of the teeth. In endeavoring to account for this condition, he asked the gentleman if he had not taken into his system iodide of potash extensively. He received an affirmative reply. At that time Dr. Watt, of Ohio, then visiting New York, happened to be in his parlor, and was invited in to look at the case. His opinion being asked, he remarked that they had the appearance of being saturated with iodide of potash, thus confirming the view taken by Dr. D., as before expressed. Dr. Dwinelle thinks that our chemistry is constantly changing in this particular. Sometimes it is an acid, sometimes an alkali, and sometimes we say it is a deficiency of lime; but we can only speculate. A young lady called on him whose teeth had become much eroded in a few months' time, caused by a too free use of lemon juice. He smoothed and polished the eroded surfaces, and administered a preparation of lime. A year after he found that the trouble had been arrested.

Dr. C. E. Francis—Stated that the worst case of enamel erosion that ever came to his notice was in the mouth of a young lady, an invalid, who for a long time had been dosed with bromide of potash and bromide of soda. The erosion was so complete that scarcely a particle of enamel was left on her teeth, and they were extremely sensitive to the touch, and for use, worthless.

Dr. C. F. W. Bodecker—Had collected many such teeth, and pre-

pared specimens for the microscope, in hopes to discover the secret, but the results were not altogether satisfactory. In his own mouth were two incisors somewhat denuded of enamel. He had tested the saliva for acid and alkali, but found neither. He uses chalk, also the galvano-cautery.

Dr. F. Y. Clark—It seems a mooted question whether or not erosion takes place on devitalized teeth. He had seen several cases that were thus affected. He was not ready to admit that it was a constitutional defect.

Dr. Darby—Remarked that he had also seen grooves on devitalized teeth, but presumed that the erosion took place before they became devitalized.

Dr. J. W. Clowes—Knew of no subject so vast and important. He used to hear of the denuding process, but no one seemed to know much about it. When he saw the old-time black decay, he knew what it meant and how to treat it, but now we have this terrible white decay, and we stand aghast! He contends that it is no riddle, but is in great part due to tonics prescribed by physicians. Excessive use of acids and alkalies act upon the teeth and cause them to melt away. He wishes that some impression could be made upon physicians that would cause them to desist. Such medicines baffle the efforts of the dentist to save teeth. In old times such was not the case, and it should not be so now. He uttered an earnest protest against giving tonics that destroy the teeth. The excuse for giving such remedies is that it is their duty to save life, even though the teeth are sacrificed. He does not believe in giving medicines that destroy one part to cure another. He had carefully cultivated good teeth only to have them riddled by erosion. But it is not a "mystery." The tincture of iron dissolves out the tooth structure, and the brush makes the grooves.

Dr. W. T. Laroche—Said that the best thing to do in cases alluded to was to polish and burnish the denuded parts.

Dr. Frank Abbott—For many years thought he had the problem solved. He believed it caused by acids and the brush. Now he thinks they have not so much to do with it, but believes it in great part due to a congenital defect of enamel structure. He finds many cases of imperfect enamel with soft spots, or spots less calcified, where friction would have effect and cut ridges. He considers this a field for study.

Editorial.

THE INTERNATIONAL MEDICAL CONGRESS AGAIN.

In our last number was published the report of the conference of dentists in Buffalo, called to consider the propriety of completing the organization of a Dental Section in the International Medical Congress, of 1887. Some of those present traveled nearly two thousand miles to attend it. The meeting unanimously voted that it was inexpedient, under the present circumstances, to establish such a Section.

At the banquet of the late meeting of the First District Dental Society, in New York, where representative dentists were present from nearly all sections of the country, an expression of opinion was obtained by vote. No speeches to influence the minds of those present were made, but it was requested that all who believed it inexpedient that a Dental Section should be established should rise. All but two stood upon their feet at once.

In view of these most unequivocal expressions of opinion upon the part of those who are best acquainted with the status of affairs, it seems to us that the duty of such as were appointed to official positions in the Section, or who may be offered such, is plain. A Section cannot be organized without dividing dentistry as medicine is now divided. It matters not what the right of the matter is, nor which of the opposing medical factions is most in fault. The existing fact is that only a portion of the medical profession will take any part in the Congress, and that portion, neither in point of numbers nor influence, can claim to be the great body of the profession. A successful Congress cannot be organized without unity, and the breach is so wide that it now seems impossible that it should be bridged over. It is idle to assert that the differences are upon the point of settlement. It is no mere insignificant faction of malcontents who decline to have anything to do with the Congress. It comprises some of the best men in the profession. We might say that it is composed of *the* best men of medicine. They are not factional in spirit, and will not openly oppose the Congress, but they will have nothing to do with it, and without their aid foreign delegates cannot be induced to attend.

This is the exact condition of affairs to-day. What has brought

this about is not unknown to the readers of this journal. Let the blame rest where it may, the absolute truth is that the Congress will, in the main, be one of second and third rate men, and with such an one dentists should have nothing to do. How can we invite foreign dentists to attend a meeting such as this promises to be? What would be our feelings in the face of the invidious comparisons that must be made between this and the London meeting? With what propriety could we ask the establishment of a Dental Section in future Congresses, when it was known that we were compromised by taking part in a factional Congress? It seems to us that the part of wisdom is for us to stand aloof for the present. If, when the American Medical Association shall meet next spring, it shall recede from the unwarranted position that the Congress shall be dominated by that or any other single society, then we can all join in and act together. At present such a thing is impossible.

Of those who were appointed officers of the Section, when it was first organized under happier auspices, all but four have resigned, and of these four we know of but two who have definitely accepted and will continue to act. From the other two word has not been received. A number of additional members of the Council have been appointed, and a number of these have declined. Does this look like harmony among ourselves? Does it promise even a partial success, when so great a majority of those who were invited to prominent positions in the Section decline? For the sake of peace and harmony among ourselves, and because we believe that the best interests of dentistry demand it, we earnestly hope that the full organization of the Section will not at this time be pushed. Let us follow the example of the American Ophthalmological Society, and stand aloof, unless we can go in unitedly.

Let it be understood that we are not canvassing the merits of the medical quarrel at all. We are simply looking at existing, undisputable facts. The dentists should consider the matter as it is, and not according to what it might, could, would, or should have been. The simple truth is that only a comparatively small proportion of the profession will take part in the Congress, unless there shall be some radical changes made, and it is not advisable that dentistry be ruptured in twain, even though it were possible for a successful meeting to be held.

DR. ALLPORT'S PYORRHOEA INSTRUMENTS.

One of the most complete sets of instruments of any kind, that we have yet seen, is that of Dr. W. W. Allport, for the treatment of pyorrhœa. Devised for his own use, we do not know that they are to be found in the dental depots, although Dr. Allport could doubtless have them made for any one who wishes. The set comprises thirteen beautiful scrapers, for both the pulling and pushing motion, besides an explorer and half a dozen bars expressly designed for dressing the edge of the alveolar border, without injury to the gums or teeth. There is no exposed point, on either the teeth or their investment, that cannot be easily reached with one of these instruments, which are all contained in a neat rosewood case. Equipped with this set, the operator is prepared for the operative treatment of any case of pyorrhœa that he may meet.

APOLOGETIC.

We are obliged to ask forbearance from our correspondents. There are articles from valued contributors for which we cannot at present find room. They will be inserted all in good time, but space is limited, and we cannot get one hundred pages of reading matter into a fifty-six page journal. We are obliged to omit the letter to Junior Dentists, as well as other editorial articles. Judging from the many letters of commendation which we have received, this will be a disappointment to some, but the subject will be resumed next month. We have changed the type and the make-up of "Current News" that we may gain a little space, but even this does not relieve the pressure. We feel under obligations to those who have favored the journal with articles, and can assure them that all such as have been accepted will see the light as soon as possible.

LABOR LOST.

Some one sends to the editorial office of this journal an advertisement for insertion, without any address or name accompanying it. Of course, it cannot go in until we know from whom it is received. Besides, business matters of this kind should always be forwarded to the business office in New York.

COGGSWELL'S DISK CARRIER.

"Be sure that you go to see the new Coggswell Disk-holder at Codman & Shurtleff's," was the last injunction of Prof. Abbott as we were leaving New York for Boston. We obeyed, saw, and straightway ordered one. It is one of the neatest contrivances imaginable, comprising disk-holder and guard in one instrument. The disks are readily changed, and may be carried with the face out or in, as desired. We have used various devices for disk-holders before, but none that were so complete as is this. We call attention to it, not for the benefit of the manufacturers, but in the interest of the dentists.

BIBLIOGRAPHICAL.

DENTAL BIBLIOGRAPHY. *A standard reference list of Books of Dentistry, published throughout the world, from 1536 to 1885; arranged Chronologically, and supplemented with a complete cross-reference to authors.* By C. GEO. CROWLEY. Philadelphia: The S. S. White Dental Manufacturing Company. 1885.

Many dentists have bewailed the paucity of dental literature. How many books does the reader imagine are catalogued in this volume? No less than *two thousand and forty-seven* separate works and editions. Nor does this include the innumerable pamphlets and monologues that have been issued all over the world. Surely, we make a better showing than most of us had thought possible.

The book shows the most intimate acquaintance, on the part of the compiler, with our literature. It also indicates remarkable bibliographical intelligence, and great industry. We have known Mr. Crowley as a bibliophile, and have often had occasion to consult him concerning books of which no one else seemed to know anything, and have never found his knowledge at fault. Had we been called upon to select the man best qualified for this bibliographical task, we should unhesitatingly have pointed out Mr. Crowley, and his work would have justified the choice.

The work is divided into five departments or sections. Section I contains books published in Germany, Austria, Holland, Norway, Sweden, Denmark, and Switzerland (German); Section II books published in France, Belgium, and Switzerland (French); Section

III books published in Spain and Italy ; Section IV books published in Great Britain and Ireland ; Section V books published in America.

The reader may be curious to know which language has proved most prolific of dental books. Section I, (German) has furnished 752 works ; Section II, (French) 710 ; Section III, (Spanish and Italian) 46 ; Section IV, (Great Britain) 230 ; Section V, (America) 309. It will thus be seen that Germany leads in our literature, but is closely followed by France, and either has given us more books than all the English speaking nations, while the Spaniards and Italians are far in the rear.

Samuel S. Fitch had, to his "System of Dental Surgery," appended a bibliography, and names about 350 different works. (Our edition is the second, 1835.) Maury (Treatise on the Dental Art, American edition, 1843), names about 250 different authors, and the translator adds about 40 more. Paul B. Goddard (Anatomy, Physiology and Pathology of the Human Teeth, 1844), enumerates 287 different authors. J. E. Dexter (History of Dental and Oral Science in America, 1876), enumerates 70 different American works. It will be seen that neither of these authors has attempted to make a complete bibliography, nor will their lists at all compare with that under notice. The publishing of a complete and correct list of its books to date marks an important era in the history of any profession, for it is only by its aid that an entire knowledge of the advancement as a profession can be determined. Such a work grows more valuable with time, and any dentist who makes pretensions to a knowledge of his professional literature will have a copy. If he does not possess the list of books belonging to his calling, when it is so easily secured, he can have no claims to literary knowledge. This book is admirable in every way, and in every department the work seems to be thoroughly done.

The profession owes a debt of gratitude to Mr. Crowley for what he has accomplished. It will hardly be expected that the sales will sufficiently remunerate him for the great expenditure of time that the necessary researches have demanded. The First District Dental Society has already conferred upon him an honorary membership. We hope that some one of our institutions of learning will recognize his bibliographical attainments and the devotion which he has shown to the profession, by some fitting honorary distinction that will show that we are not ungrateful.

DENTAL MEDICINE. *A Manual of Dental Materia Medica and Therapeutics, for Practitioners and Students.* By FERDINAND J. S. GORGAS, A. M., M. D., D. D. S. Second edition. Revised and enlarged. Philadelphia: P. Blakiston, Son & Co. 1885.

In the last volume of this journal we reviewed the first edition of this work, and now we are called upon to notice the second. It is a very unusual event in the history of any medical book, when the second edition is so soon called for. When the first appeared we predicted that it would meet with favor, and the unusual sales have verified the not very hazardous forecast. The second edition is a considerable improvement upon the first. There are always minor particulars in which a book may be improved, and these cannot usually be detected until the work has been for a time in the hands of the public. Sixty-eight pages have now been added, and the whole text revised. Short as has been the time since the first edition, there were already a number of new remedies offered to the profession, all of which, we believe, have received due notice. Cocaine, Peroxide of Hydrogen, Papain, Resorcin, Eugenol, Naphthalin, Chinoline, Ol. Sanitas, with a number of other fresh aspirants to favor are considered. There is also a new chapter on Inflammation of Mucus Surfaces, while that upon Diagnosis has been rewritten and considerable valuable matter added to it.

Gorgas' Dental Medicine has already taken its place near the head of our professional literature. It has, we believe, no equal in the English language, if in any other, as a text-book on dental medicine, and we shall look to see it adopted in all countries, where there is dental teaching, as the standard work on dental *Materia Medica and Therapeutics*.

DISEASES OF THE TONGUE. BY HENRY T. BUTLIN, F. R. C. S., *Assistant Surgeon and Demonstrator of practical Surgery and Diseases of the Larynx, St. Bartholomew's Hospital; lately Erasmus Wilson Professor of Pathology at the Royal College of Surgeons.* Illustrated with chromo-lithographs and engravings. Philadelphia: Lea Brothers & Co. 1885.

At first thought it might be believed that the devotion of a whole book to the consideration of so small an organ as the tongue would make but unprofitable reading. Yet here is a work of four hundred and fifty closely printed pages, not one of which could well have

been omitted. When we reflect that the tongue presents an index of the condition of the whole digestive tract, and that upon its surface may be traced some indication of almost every disease that attacks man, and that its deeper tissues are subject to many pathological changes, the significance of such a work may be partially understood. The one under notice has twenty-five chapters, and some of the subjects of which it treats are Accidents, Congenital Defects, Discolorations, Inflammations, Eruptions, Indentations, Excoriations, Furrows, Fissures, Ulcers, Patches and Plaques, Nodes and Nodules, Smooth Patches, Atrophy, Hypertrophy, Cysts, Salivary Calculus, Tumors, Cancers, Operations, Parasitic Affections, and Nervous Affections of the Tongue. It has also a list of works and papers referring to diseases of the tongue, and a copious index.

Every oral surgeon should be thoroughly acquainted with this organ, and dentists especially, who are constantly engaged in the treatment of oral diseases, cannot afford to remain in ignorance of the subjects treated of in this book. It is a duty which all such owe to their patients to become thoroughly familiar with the tissues of the mouth, of which the tongue is the most important. We could not refer them to a work that would prove of greater interest to them, and we unhesitatingly recommend it to every progressive dentist. A thorough study of its contents by members of our societies would enlarge the field of discussion, and add greatly to the interest of the meetings.

ESSENTIALS OF VACCINATION. *A compilation of facts relating to vaccine inoculation and its influence in the prevention of Small-Pox.* By W. A. HARDAWAY, M. D., Professor of Diseases of the Skin in the Post Graduate Faculty of the Missouri Medical College, St. Louis. St. Louis: J. H. Chambers & Co. 1886.

This book is timely. The intense interest that has been developed, concerning vaccination, by the epidemic of small-pox in Canada, and the occurrence of the vaccination riots in Montreal, has directed the attention of the whole world to the only real prophylactic with which we are acquainted. There has always been in existence a class of men who, upon principle, disputed what all the rest of the world believed. There has not lived a great leader of the people, from Moses to Washington, whose very existence they have not denied. So it is not astonishing that the virtues of vaccination have

been disputed. Upon the truth of the general theory of inoculation rest the hopes of the world for the prevention of many infectious disorders. If vaccination be not preventive of small-pox, Pasteur's experiments are vain.

Every one will, therefore, desire to know the history of, and the facts relating to, vaccination, and that is what this book professes to give. The nature of the virus and the changes wrought by it are all intelligently considered. The work will prove of great interest to all intelligent men.

A SERIES OF QUESTIONS PERTAINING TO THE CURRICULUM OF THE DENTAL STUDENT. BY FERDINAND J. S. GORGAS, M. D., D. D. S., of the University of Maryland. Baltimore: Wm. K. Boyle & Son. 1885.

For the dental student such a work is invaluable. It not only gives proper direction to his studies, but it teaches him conciseness and preciseness. In preparing for examination it becomes an essential. Nor is it alone the student who will find it of value. The practitioner, who would retain in his memory the teachings of his college days, and who would keep abreast the march of progress, would do well to take up a chapter occasionally, and ask of himself the questions which it contains. If he be not at times astonished that he should have forgotten so much, shocked at his own ignorance, and thereby spurred on to a renewed application to his textbooks, his experience will be different from that of most men.

The many years which Prof. Gorgas has spent as a teacher in our dental colleges especially qualifies him for the preparation of such a work as this. Nor is it the training of experience alone that he brings to the task. He has the broad views, the general culture, and the discriminating mind that are so necessary to the successful teacher, and all these qualities are amply exhibited in this excellent series of questions, which covers almost the whole field of dental research.

THE CINCINNATI MEDICAL AND DENTAL JOURNAL. Monthly. M. A. Spencer & Co., Publishers, Cincinnati, Ohio. \$1.00 per Annum.

This is a new aspirant for dental favor. It starts out, as did the INDEPENDENT PRACTITIONER originally, with a Medical and Dental department. The former is under the charge of A. B. Thrasher, A. M., M. D., and the latter, of Frank W. Sage, D. D. S. Both the

editors are accomplished writers, and together they present a journal of interest. But our experience, as one of the editors of a journal with both a medical and dental department, has taught us that each suffers at the hands of the other. Thirty-two pages are not too much for the presentation of a fair resumé of either. A journal should have a definite aim, and we do not think it can successfully cover the ground of both general and special practice. But we hope that the *Medical and Dental Journal* will disprove these impressions, and we wish it the most abundant success. The experiment is worth another and more perfect trial.

TRANSACTIONS OF THE AMERICAN DENTAL ASSOCIATION. *Twenty-fifth Annual Session, held at Minneapolis, Minn., August, 1885.* Philadelphia: The S. S. White Dental Mfg. Co.

The annual volume comes to us much improved in appearance this year, as it is substantially bound. The papers are all given in full, and some of them are of great value, but the discussions, it seems to us, are not as complete as in some former issues. Perhaps this is an improvement also, for there is very much said at the meetings which is not only of no moment, but the publication of which would be actually detrimental to the volume. Its typographical appearance, like that of all the books published by this house, is very neat indeed. It presents indications of great care in the proof-reading and press-work.

TRANSACTIONS OF THE TEXAS STATE MEDICAL ASSOCIATION. *Seventeenth Annual Session, held at Houston, Texas, April, 1885.*

We are under obligations to Dr. F. E. Daniels, chairman of the Committee on Publication, and editor of that sprightly monthly, *Daniels' Medical Journal*, for a copy of this book. It forms a volume of 430 pages, and is beautifully bound and executed. That much is gained by having a live journalist at the head of the Publication Committee.

DENTOLOGIA. *A Poem on the Diseases of the Teeth, and their Proper Remedies.* By SOLYMAN BROWN, A. M.

We are indebted to the son of the author, Dr. E. Parmly Brown, for a copy of this beautiful poem. It is contained in the *Semi-Annual Dental Expositor* for May, 1852, copies of which are now exceedingly rare, and hard to be obtained. If we had but the space to spare we would gladly quote passages from it, to show the easy flowing rhythm, and the luxuriant imagery of this, the first of dental poems.

PHYSICIANS' VISITING LIST FOR 1886. Philadelphia: P. Blakiston, Son & Co.

This is the thirty-fifth year of the publication of this work. Little more need be said in its favor. It contains calendar, list of poisons and antidotes, dose tables, Marshall Hall's and Sylvester's methods of producing artificial respiration, with illustrations, diagram for diagnosing diseases of the heart, lungs, etc., and much other valuable information.

THE DENTAL ECLECTIC.

This is a new bi monthly journal, devoted to dentistry, published by H. L. Willard, of the Knoxville Dental Depot, and edited by S. S. Willard, D. D. S. The first numbers present a good appearance, and appear to be well edited. Fifty cents per year.

On the Measurement of the Degree of Anæsthesia Produced by Cocaine. By Lucien Howe, M. R. C. S., Buffalo, N. Y. Reprinted from the *Archives of Ophthalmology*.

Effect of Cocaine upon the Healing of Wounds. By Lucien Howe, M. D., Buffalo, N. Y. Reprinted from the Transactions of the Medical Society of the State of New York.

These two pamphlets give the records of exhaustive experiments upon animals, and are conclusive in their results. Dr. Howe is an indefatigable student. All his experiments are conducted in a strictly scientific manner, and the conclusions carefully tabulated.

Pure Cultures for Bacteria. By Albert Haupt, M. D., Chenmitz, Saxony. A paper read before the American Institute of Homœopathy, at St. Louis, June, 1885.

Iritis. Its relation to the Rheumatic Diathesis, and its treatment. By Charles J. Landy, A. M., M. D. Reprinted from *The Physician and Surgeon*.

The Surgical Treatment of Cysts of the Pancreas. By N. Senn, M. D. Reprinted from the *Journal of the American Medical Association*.

Observations upon the Mutual Relations of the Medical Profession and the State. President's Address, delivered before the Michigan State Medical Society. By Donald Maclean, M. D.

Avena Sativa in the Treatment of Opium Addiction. A therapeutical fraud, a delusion and a snare. By J. B. Mattison, M. D., Brooklyn, N. Y. Reprinted from the *Medical Bulletin*.

TWO OR THREE LITTLE THINGS.

You will often find the paper disks very handy for finishing proximal fillings in upper front teeth by hand. Take the disk between your thumb and finger, and you have a little file, sharp, flexible, and elastic.

The surgeons relieve hyperæsthesia by nerve-stretching. That is, they lay the nerve-trunk bare and forcibly stretch it. It is an old observation that wedging a tooth with proximal decay will frequently make it less sensitive, and I have supposed that this was because the wedge covered the opening of the cavity and excluded irritants. But two or three cases lately, in which this did not apply, have led me to think that, as the first effect of the wedge is to lift the tooth a little from its socket, we may have here a true case of relief from nerve-stretching.

Two drachms of menthol in an ounce of alcohol make an excellent application for a grumbling periodontium, as Dr. Francis first taught me. But this solution is also the very best obtunder for softened and sensitive dentine that I have ever used. A drop in the cavity will take effect in three to five minutes, but sometimes a second drop is useful. It is effectual in about half the cases which need such help.

J. SMITH DODGE, JR., M. D.

DR. JAMES SHEPHERD.

The following resolutions of respect were passed at the twenty-first annual meeting of the Massachusetts Dental Society, Dec. 11th, 1885.

WHEREAS, The Massachusetts Dental Society hears with regret of the decease of our worthy and esteemed fellow member, Dr. James Shepherd, of Boston.

Resolved, That we hereby sympathize with his family and relatives in their sad bereavement, and that we tender to them the sympathy of this society, of which he was so long an honored member.

Resolved, That in his association with us he was ever wise, genial and kind, and won our private and professional esteem, and we shall miss his cheerful presence.

Resolved, That we were happy to know that in departing from us he had a firm faith in continued life, and a belief in the profound wisdom of Divine Providence, and we trust that in that Providence his friends and comrades will meet him again and renew with interest the friendships here formed.

Resolved, That a copy of these resolutions be forwarded to his family, and sent to the dental journals for publication.

Respectfully submitted,

J. T. CODMAN,
S. F. HAM,
S. B. JEWELL,
Committee.

Boston, Dec. 11, 1885.

SURGEON BILLINGS.

At the time of the session of the last International Medical Congress, in Copenhagen, Dr. Billings, by order of the Secretary of War, attended it as the representative from the United States Army. The Treasury Department now refuses

to allow his expenses, and he must pay them from his own pocket. This places us in a humiliating condition before other governments. The pay of a surgeon of the U. S. Army is not large, and it is an affront to the medical profession when a reasonable bill for such expenses is refused payment. It is not long since an admiral in the navy was forced to pay two hundred dollars from his own pocket for the entertainment of guests of the nation upon one of our national vessels.

TWO LION CUBS were lately born in the Philadelphia Zoological Gardens, but both died because of their inability to take nourishment, owing to their having cleft palate. "Aha!" says the Aqua Calcis dentist; "Another confirmation of my theory. They did not get a sufficiency of lime salts. The mother was fed on meat without the bones. There was a lack of material for bone making, and here is where the shortage was manifested."

If there had been a yet greater deficiency of lime, would the young lions have been without jaws at all, or would they possibly have had but three legs, or been lacking a tail? Really, the deficiency of lime should show in one bone as much as in another. But it so happens, in this case, that the chemical laboratory doctors had been heard in advance, and there was special pains taken during the gestation of the mother to see that she was supplied with bones in abundance, and phosphates in profusion. The case is but another confirmation of the fact that malformations of the mouth are very common in the young of wild animals of the feline species, when born in captivity.

THE MEDICAL AND SURGICAL REPORTER, without giving the name or place of residence of the physician, reports a terrible mistake recently made. A young woman suffered from an eye affection which necessitated enucleation. She was put under chloroform, and the operation performed, but it was found after she had recovered consciousness that the sound eye had been removed. The physician immediately fled the house, so thoroughly was he overcome by the mistake. A suit for malpractice will, of course, be forthcoming. Such a blunder is inexcusable under any conceivable circumstances.

VACCINATION.—Persons entering the United States from Canada, if not already vaccinated, must submit to the process at the hands of the medical inspector upon the train. A lady, not long since, evaded the regulation by sewing a button inside the sleeve of her dress, in the usual place for vaccination. When the inspector demanded that she should bare her arm, she invited him to feel the scab of a previous vaccination, and presented the hidden button. The device succeeded, and the shrewd woman went on her way rejoicing.

A CREMATORY, built after the latest approved plans, is now under construction in Buffalo. It will be open for use as soon as finished, and then the ashes of Buffalonians can be decently inurned without sending the remains abroad. The crematory is built by an association of the physicians of the city.

DR. CHISOLM related two cases in which decided loquacity had been produced by the introduction of cocaine into a cavity in a decayed tooth. In speaking of cocaine tablets, he referred to a condition, amounting almost to a slough, that was produced on the buccal surface of his own cheek, from the application of one of these tablets to the gum and allowing it to remain till dissolved. From this, he hardly considered them the proper thing to use in nasal catarrh.—*Discussion in Baltimore Academy of Medicine.*

MR. OAKLEY COLES, the well-known London dentist, writer, and society laborer, has abandoned dentistry for the Church. Mr. Coles is the author of a number of works of importance, and held many positions of trust and responsibility in the principal English dental societies. It is a matter of great regret that he should have decided to change his vocation, for he will be indeed fortunate if he finds himself in a position to do as much good to his fellow-men by preaching as by practice.

DR. G. C. DABOLL, of Buffalo, has retired from practice in this country, and proposes soon to sail for Paris, where he will make his permanent home. He has been engaged in practice in that city, and likes it, as well he may, for he met with unusual success there. It is not pleasant to part with so genial a companion and so good a friend, but—*Le Roi le veut*. It is but necessary that he should be himself to meet with success anywhere.

DR. W. H. MORGAN, of Nashville, Tenn., has received the unsolicited appointment of Commissioner of Indian Affairs, or Indian Agent. Had such men as Dr. Morgan always been selected for the management of our relations with the Indians, there would have been less of bloodshed, and our national reputation for fair and honorable dealing with these wards of the nation would not have been clouded as it is.

AN OLD HIGHLANDER, fond of his toddy, was ordered by his physician not to exceed one ounce of spirits daily. The old gentleman was rather dubious about the amount, and asked his son, a schoolboy, how much an ounce was. "Sixteen drams," was the reply. "What a guid doctor," exclaimed the Highlander; "run and tell Donald McTavish and Big John tae cam doon the nicht."—*Med. Review.*

M. DUJARDIN-BEAUMETZ has recently made a report to the French Academie de Medicine of a new hypnotic, or narcotic,—hypnone. Chemically, it is a phenyl-methyl-acetone, and it seems to possess remarkable soporific qualities. Given in doses of three or four drops, it produces a profound sleep. It has been given to a number of patients with no unpleasant effects.

LOUIS ELSBERG.—The *New York Medical Journal*, for Dec. 5, contains an appreciative review of the life and professional work of Louis Elsberg, M. D., the well-known laryngologist.

WM. B. CARPENTER, C. B., M. D., LL. D., the well-known English physiologist and microscopist, is dead. Dr. Carpenter was, perhaps, more widely known than any other writer upon these subjects, and his writings have been adopted in almost every scientific school in which the English language is the mother tongue, as standard text books.

DR. KEITH, of Edinburgh, was recently brought from over the sea to give an opinion on the case of a lady, the cause of whose abdominal enlargement was obscure. He spent about half an hour with the case, and confirmed the diagnosis of the attending physician. For this service the *Northwestern Lancet* says he received \$10,000.

DYSPEPSIA AND BAD TEETH are common companions. Their relations as cause and effect may be convertible, but that both are frequently due to the neglect of the teeth and their proper use will not be disputed by any one who is familiar with the physiological relations of these useful and much abused organs.—*The Sanitarian*.

MR. ARTHUR UNDERWOOD has been appointed editor of *The Journal of the British Dental Association*. Mr. Underwood is not unknown in this country, by his writings, and we are sure that he will grace the chair editorial. The association is to be congratulated upon securing the services of so competent a man.

J. H. SPAULDING, D. D. S., late of Minneapolis, has sailed for Europe, where he proposes to establish himself in practice. He has not as yet decided where he will locate. Dr. Spaulding has had some Old World experience, having practiced two years in Germany.

THE PROFESSOR OF ANATOMY in one of the medical colleges of this city recently asked a student what the sphenoid bone articulated with. He was answered: "With all the bones of the head except the coccyx, and in some rare instances with that."

THE NEW YORK MEDICAL JOURNAL relates a case in which the salicylate of cocaine was successfully used for the cure of persistent trigeminal neuralgia. In the course of six days, eight injections of six grains each into the cheek, produced permanent relief.

AN APOLOGY is due T. B. Welch & Co., whose corrected advertisement is in this number. The revision of their price list was sent us some time ago, but in the confusion which attended the removal of the editorial office it was lost. Note the changes.

TOO LATE FOR NOTICE in this number there was received a copy of the transactions of the Iowa State Dental Society's Twenty-third Annual Meeting. The volume presents a very handsome appearance.

"PREVENTIVE MEDICINE."

PROPHYLACTIC, ANTISEPTIC, DISINFECTANT,
LISTERINE
NON-TOXIC, NON-IRRITANT, NON-ESCHAROTIC.

These properties added to the absolute safety of Listerine, its agreeable character and uniform strength, concentrates into this preparation every requisite of a perfect Prophylactic, and gives it undoubted superiority over all other Antiseptics, especially for internal use. The well-known therapy of the several ingredients of Listerine confirms its claims for more than merely mechanical germicidal properties.

Formula.—**LISTERINE** is the *essential Antiseptic* constituent of Thyme, Eucalyptus, Baptisia Gaultheria and Mentha Arvensis in combination. Each *fluid drachm* also contains *two grains of refined and purified Benzo-Boracic Acid*.

Dose.—One teaspoonful *three or more times a day* (as indicated). As a local application to ulcers, wounds and abscesses, or as a gargle, mouth-wash, inhalant or injection, it can be used *ad libitum*, diluted as desired.

The universal commendation of **LISTERINE** by Physicians and Scientists of all Schools throughout the United States, after five years' thorough Clinical Experience, has fully established its value in **PHTHISIS, DYSPEPSIA, DIPHTHERIA, CATARRH, DYSENTERY, SCARLATINA, SMALL-POX, ERYSIPELAS, TYPHOID** and other **FEVERS**; and as the most grateful and pleasant disinfectant and prophylactic for **VAGINAL INJECTIONS** in **OBSTETRICS, LEUCORRHOEA, GONORRHOEA**, and, notably, for the hands, after Surgical and Gynæcological Operations.

This accumulated evidence of merit indicates its special adaptability to

DENTAL PRACTICE.

The testimony of its value in the treatment of **ORAL DISEASES**, in **Dental Practice**, is set forth in a special pamphlet on that subject to be obtained gratis on application, together with many Valuable Clinical Notes and Reprints by Eminent Surgical, Medical and Dental Authors.

☛ Three Reprinted Lectures on **CHRONIC NASAL CATARRH**, (illustrated by forty wood cuts,) by Prof. **GEORGE M. LEFFERTS, M. D.**, New York City, are now ready for delivery, free of cost, to those who mention this Journal in making application.

LAMBERT PHARMACAL CO.,

New Office and Laboratory. - 116 Olive Street, ST. LOUIS.

HARDMAN'S WHITE ALLOY

Takes the place of gold for filling front, or any teeth.

PRICE, \$3.00 PER OZ.

Test for Color—Place a button of Amalgam, that has one surface polished, into a solution of 40 to 60 grs. of sulphuret of Pottassa in 1 oz. of water. Let remain 24 to 48 hours.

Test for Leakage—Fill a small glass test tube with it, just as you would a cavity in a tooth, and drop it into a bottle containing an alcoholic solution of red aniline.

This Alloy Stands These, and Any Other Tests Deemed Requisite to Perfection.

HARDMAN'S SUPERIOR AMALGAM

Surpasses all others for strength and density of texture. Use it for Crown Work, in Molars, &c.

PRICE REDUCED TO \$4.00 PER OZ.

Large discounts on both of these in quantities.

MADE AND FOR SALE BY

J. HARDMAN, MUSCATINE, IOWA.

If your depot does not keep them send to the proprietor for them.

8-4-AN- $\frac{1}{4}$

DIBBLE'S WHITE AMALGAM

A Gold Alloy. \$5.00 per ounce.

Manufactured only by

W. H. DIBBLE, MIDDLETOWN, CT.

For sale by S. S. WHITE DENTAL M'FG CO., or sent by mail by the manufacturer.

ALSO MANUFACTURER OF THE DIBBLE PLUGGER.

THE FOLLOWING TESTIMONIALS ARE RESPECTFULLY OFFERED.

Dibble at present is ahead on Amalgam.
NEW YORK, Jan. 9, 1883.

J. W. CLOWES, 667 Fifth Avenue.

I believe it to be the best article of the kind in use.

W. H. DWINELLE, M. D., 27 West 34th St., New York.

I take pleasure in recommending it as the best now known.

GEORGE H. PERINE, 74 West 50th St., New York.

Have used it three years, and it has given me better results than any other.

O. E. HILL, M. D. S., 160 Clinton St., Brooklyn, N. Y.

I am satisfied it is the best in use. I can recommend it to the profession.

C. E. GRAVES, 393 Jay Street, Brooklyn, N. Y.

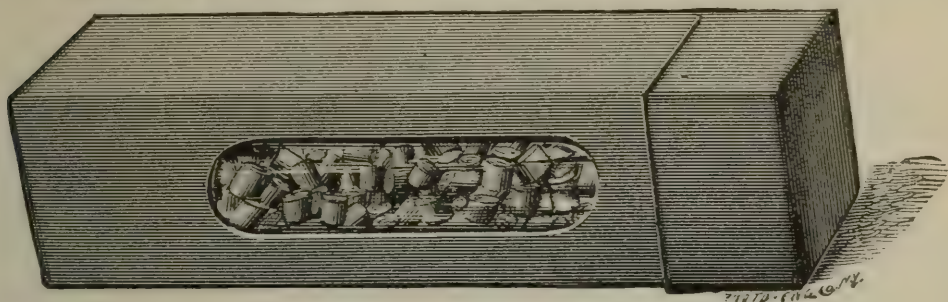
It is the best I have ever used.

MILES H. DODGE, 20 E. 33d St., New York.

\$5.00 per oz. or 3 oz. for \$12.50. Sent by Mail.

3-5-AN- $\frac{1}{2}$.

EXTRA PLIABLE DECIMAL GOLD ROLLS.



(This Engraving represents a Phial of size 1 of the above designated Gold, inclosed in a Box.)

Gold Foil and Gold Rolls, per 1-10 ounce,	-	-	\$3 00.	Per ounce,	\$28.00
Extra Pliable Decimal Gold Rolls, per 1-10 ounce,	-	-	3.50.	Per 1/2 ounce,	17.00
Untrimmed Foil, per 1-5 ounce book,	-	-	-	-	5.50
Ideal Cement, per package, with Pigments,	-	-	-	-	1.00
Rowan's Ideal Alloy, No. 1, per 1 oz.	\$5.00,	2 OZS.	\$9.00,	4 OZS.	16.00
Rowan's Ideal Alloy, No. 2, per 1 oz.	\$3.00,	2 OZS.	\$5.50,	4 OZS.	10.00
Tin Foil (our make), very tough, per book,	-	-	-	-	.50

Try some of our "Ideal" Cement Filling and "Ideal" Alloy.

Appended are testimonials for our preparations of Gold from well-known gentlemen:

I have used the Rolled Gold of Edward Rowan & Co., and like it very much. I prefer high numbers—30, 60 and 120—for facility of adaptation to walls of cavities, capacity to bear high annealing and making solid work, I know no superior make.

W. H. ATKINSON,
41 E. 9th Street, N. Y.

BALTIMORE, Md., June 5th, 1883.

October 23, 1882.
271 N. Eutaw Street.

GENTLEMEN—I have used nearly all of the last ounce of your "Extra Cohesive" Decimal Gold Foil No. 4, and it affords me pleasure to inform you that it has proved to be a first-class article in every respect. It is cohesive and tough in the highest degree, yet possessing less harshness than is usually found in cohesive foils. I cheerfully thus refer to it, and so long as you continue to make such foil, I want nothing better.

Very respectfully,
JAS. H. HARRIS, M. D., D. D. S.

BOSTON, MASS., June 30, 1883.

No. 100 Boylston Street.
Sirs—I have used your Rolled Gold for several years. When I wish to use cohesive gold, I prefer your No. 30 Rolled to any gold with which I am familiar. It is very tough, soft and cohesive. In short, pleasant and easy to work, and makes a compact, even and finished filling.

Yours truly,
L. D. SHEPARD,
Late Professor of Operative Dentistry, Harvard University.

S. H. GUILFORD, A.M., D.D.S., (Professor of Operative and Prosthetic Dentistry, Phila. Dental College,) has permitted us to state that he uses and recommends our "Gold Rolls."

DR. H. J. McKELLOPS, of St. Louis, writes us, under date September 16, 1884, "You may use my name in connection with your Gold with pleasure."

H. C. REGISTER, M. D., D. D. S., of Philadelphia, writes us, "You are permitted to use my name in recommending your Gold, as second to none in the world!"

CHAS. L. STEEL, M. D., D. D. S., of Richmond, Va. (Demonstrator Operative Dentistry University of Maryland). DEAR SIR—Your last ounce of Gold duly received, and, as usual, works superbly. I have used many makes of Cohesive Foil, but for some time past have confined myself to yours exclusively, as I find none other so near perfection.

A. H. FULLER, M. D., D. D. S. (Professor of Operative Dentistry, Missouri Dental College). Should you so desire you may state that I have been using your Gold for the past year or more, and find it first-class in every respect. Shall send you an order in a few days for more.

WM. CARR, M. D., 35 West 46th Street, New York, permits us to state that he endorses our Golds. He uses Nos. 3 and 4 soft; No. 60 Rolled; and Gold Rolls.

EDWARD ROWAN & CO.

196 Third Ave., NEW YORK.

COGSWELL'S Disk Carrier and Guard

MADE BY
CODMAN & SHURTLEFF,
167 Tremont Street, BOSTON, MASS.

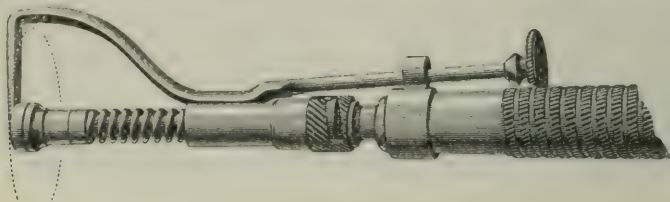


Fig. 214.

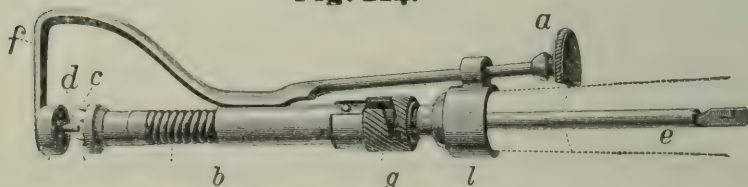


Fig. 214 A.

Patented Feb. 10, 1885.

This invention will be found indispensable by every dentist who values time, as it will enable him to attach the much used Disk to the Engine Mandrel in a small fraction of the time required by other methods.

It is represented in the figures as connected to the Hand-piece. In Figure 214 the holding device is represented as closed, the outline of Disk being indicated by circle of broken lines. In Figure 214 A, it is shown as opened by slight pressure of the thumb or finger against the knob *a*, ready to receive the disk. Upon relaxing this pressure the spring *b* closes upon the disk, which is centered upon *d*, perforated by four hardened steel points, *cc*, and thus securely held ready for rotation. The carrier is attached to the Hand-piece by insertion of the Mandrel *e*. A friction ferule *l* overcomes slight tendency of bracket *f* to rotate, and enables the operator to retain the guard opposite that portion of the disk where it will most effectually guard cheek, tongue, or other part from injury, or, prevent interference with rubber dam. At *g* is a locking sleeve, employed only when in the use of stiff disks there is a tendency to overcome pressure of spring *b*, and permit loosening of disk.

The Carrier will receive disks of $\frac{3}{8}$ inch diameter down to $\frac{3}{16}$ or even smaller. It may be rotated in either direction without loosening the disk, as occurs with the ordinary screw-held disk.

PRICE, \$2.50.

We are prepared to supply the Disk Carrier and Guard to fit the S. S. W. Hand-pieces, Nos. 5 and 6, Hodge's and Bonwill's Improved, at this price. Other Hand pieces, if sent us, will be fitted to order at the same price, or at a moderate additional charge. **In ordering, state what Hand-piece is used.**

MESSRS. CODMAN & SHURTLEFF:

BOSTON.

Gentlemen,—The new Disk Carrier, with guard, which I have fully tested, is very satisfactory in all respects. I prefer it to any other pattern now in the market.

ISAAC J. WETHERBEE, D. D. S., *Fres. B. D. C.*

From J. B. Coolidge, M.D., D.D.S., *Professor of Clinical Dentistry, in Boston Dental College.*

MESSRS. CODMAN & SHURTLEFF:—

The new Disk Carrier which you sent me is the best. It will very soon save its cost in the time required for changing the disk. The guard will be found of great use in protecting the cheek, tongue, and rubber dam from the action of the disk. I would recommend it to every Dentist.

J. B. COOLIDGE.

From J. A. Watling, D.D.S., *Professor of Operative Dentistry, Michigan University.*

MESSRS. CODMAN & SHURTLEFF,

167 Tremont Street, Boston, Mass.:

Dear Sirs,—Your Disk Carrier received. After several careful trials, I feel justified in recommending it to the profession as a very useful and valuable addition to a dentist's outfit.

It is one of the best that I ever used. Is readily applied to the engine, and to replace the old disk with a new one requires but a few seconds.

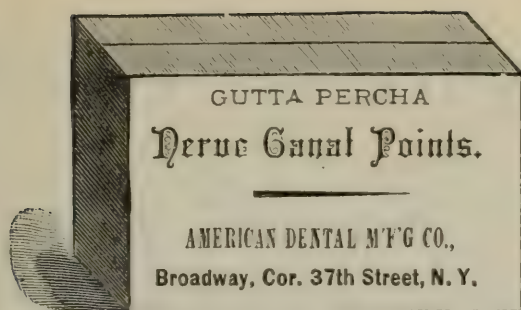
The protector, while holding the disk firmly in place and being all that is necessary for the prevention of injury to the mouth, does not shut off the view of the filling to be finished.

It is indeed an instrument to be desired by all careful practitioners.

1-6-an-1

Respectfully,

J. A. WATLING, D.D.S.

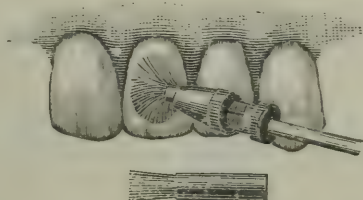


To those that have never seen or used the little Gutta-Percha Nerve Canal Points, manufactured by us for the past year and a half, we would say, that they have been well received, and extensively used by the profession generally. They are very carefully made and nicely tapered, being well adapted for the purpose for which they are intended.

The quality of Gutta-Percha from which they are made is the very best, being good and tough, permits bending in any shape, and easily worked.

PRICE PER PACKAGE OF 125 POINTS, 50 Cents.

SMALL POLISHING BRUSH.



The brush will be found very useful in cleaning teeth and finishing fillings; also in polishing the walls of cavities in preparing them for filling.

The brushes are made in three grades—soft, medium, and stiff—and adapted for use with either the Klump Port Polisher or the R. A. Port Polisher.

Price Per Dozen, 50 Cents.

Price for R. A. Port Polisher, . . . 30 Cents.

**AMERICAN DENTAL MANUFACTURING COMPANY,
BROADWAY, Cor. 37th STREET,**

The Prophylactic Tooth Brushes

ADULTS' AND CHILD'S SIZES.

The only Tooth Brush made that has received the unqualified endorsement of the Dental Profession.

Used as directed, it is a "preventive of disease."

Each brush in a box with full directions for use.

Made in hard, medium and soft; and when desired, extra soft.

Every Brush Warranted.

Circulars, Price, Etc., Sent on Application.

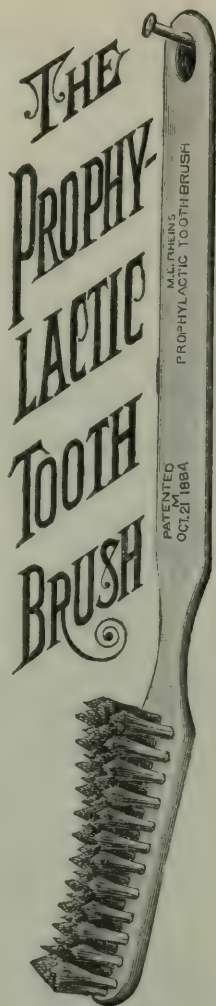
Any Dentist who has not tried this or our Dental Plate Brush, can procure a sample at the dozen price by addressing the

FLORENCE MANUFACTURING CO.

FLORENCE, Mass.

23-25 Greene St., NEW YORK.

185-187 Dearborn St., CHICAGO, ILL.



HAS IT BEEN TRIED?



NEW ORLEANS, LA.,

AUG. 5, 1885.

I HAVE USED THE BRUSHES, BOTH THE SOFT TOOTH BRUSH AND THE PLATE BRUSH, MANUFACTURED BY THE FLORENCE MANUFACTURING COMPANY, AND THINK THAT HENCEFORTH THEY WILL PROVE A *SINE QUA NON* TO ALL WHO KNOW THEIR VALUE.

THE PROPHYLACTIC TOOTH BRUSH IS CERTAINLY A LONG STEP IN ADVANCE OF ANYTHING PRODUCED HERETOFORE, WHILE THE DENTAL PLATE BRUSH FILLS A LONG FELT WANT.

J. R. WALKER, D.D.S.

SEPT. 24, 1885.

TWO MONTHS' CONSTANT USE OF ONE OF YOUR PROPHYLACTIC BRUSHES BY MYSELF, AND OF YOUR PLATE BRUSH BY MY WIFE, CONFIRMS US IN THE OPINION THAT THEY ARE EMPHATICALLY THE VERY BEST BRUSHES EVER PUT ON THE MARKET.

J. R. WALKER, D.D.S.

WAS IT SATISFACTORY?

Send for Circulars and Testimonials.

FLORENCE MANUFACTURING Co.,
FLORENCE, MASS.

REFERENCES FURNISHED ON REQUEST.

C. A. TIMME & CO. Importers of

CASH MUST ACCOMPANY THE ORDER.

ORDER HOWEVER.

COHESIVE, SOFT No

WOLFRAB'S PURE CHEMICALLY

GOLD FOIL

C. A. TIMME & CO.

IMPORTERS of DENTISTS
SPECIALTIES

SOLE AGENTS FOR THE U. S.
190 HUDSON ST. HOBOKEN N. J.

Foil, \$4.00 per $\frac{1}{8}$ oz., \$15.00 per $\frac{1}{2}$ oz., \$30.00 per 1 oz.

On orders of two ounces and more at a time a reduction of 50 cents per ounce will be given.

This gold is made in reference to the HERBST method of filling teeth with the engine. It has also proven a very desirable article for the *mallet* and *hand-pressure*.

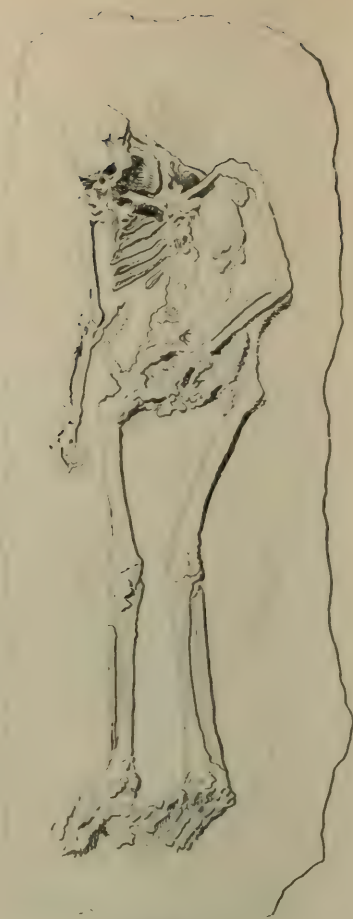
We claim it to be superior to any other make for its peculiar *softness*. It easily adapts itself to the walls of the cavity, and when properly manipulated it makes a *solid* and *cohesive* filling. If it is to be used cohesively, a slight *warming over* the flame will have the desired result.

Very good reports have been received from prominent practitioners.

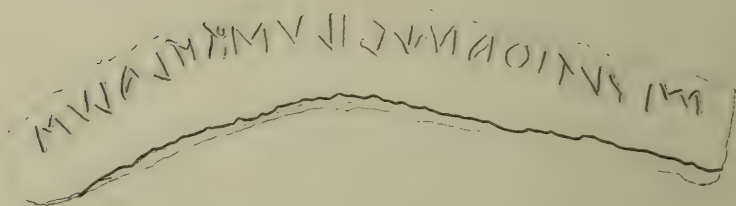
Timme's Imported German Phosphate Cement, per box, \$1.00.



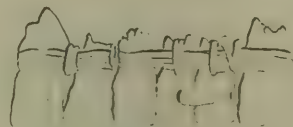
(Fig. 1.)



(Fig. 2.)



(Fig. 3.)



(Fig. 4.)

THE Independent Practitioner.

VOL. VII.

FEBRUARY, 1886.

No. 2.

Original Communications.

FURTHER EVIDENCES OF PREHISTORIC DENTISTRY.

BY J. G. VAN MARTER, A. B., D. D. S., ROME, ITALY.

Since my communication of last year, I have pursued my researches after reliable traces of early dentistry. I especially tried to find some authentic case of pre-Roman tooth filling. The noble Princess, referred to in my former article on this subject, assisted me to see the teeth which she was sure were Etruscan teeth filled with gold. In the library of the Barberini Palace, in this city, most carefully guarded by lock and key and screw, I found this treasure-trove. Viewed under glass, this case might easily deceive the unprofessional eye, for it was thickly covered with the debris of ages. It took a great deal of persuasion to induce the polite and careful librarian to allow me to remove enough of the dust of centuries (he said it was sacred dust of three thousand years ago) to see what the Etruscan relic really was. It proved to be four natural teeth—two superior central incisors, lateral and cuspid—banded together with pure gold bands, and attached to adjoining teeth precisely like those described by me formerly. This case belongs to the same period as those I found at Corneto, and in workmanship was so nearly identical that it might have been made by the same dentist. It was taken from an Etruscan tomb at Palestrini, near Rome, with numerous fine specimens of gold and bronze-work. As a specimen of early tooth filling, this case is an utter failure, for the gold was *on* and *around*, and not in the teeth. Likewise, the gold in the mummy teeth, in the museum at Naples, reported to me

by authorities, has vanished, and is not even *on* nor *around* the teeth.

Undeterred by these disastrous failures to find gold in the teeth, I proceeded to the Vatican, and by the kind intervention of Mgr. Cataldi, was freely permitted to make a careful search through the vast collection of Etruscan relics and treasures, but found no trace of prehistoric teeth or dental work to reward my patience. Private collections have been visited also, with like result.

The most extensive collections of Etruscan remains, skulls and teeth, in Italy, so far as I know, is to be found in the Museum of Bologna, which place I visited in October last, for the purpose of studying this most extensive and rare treasure-house.

It gives me pleasure to be able to send herewith several photographs of some of the best preserved remains in Etruscan tombs, which were taken on the spot. (See Figs. 1 and 2.) In the photo marked No. 1 the teeth were exceedingly fine in form and preservation. In No. 2 the teeth were equally fine, but twenty-eight in number, with no trace or sign of there ever having been thirty-two. In three other skulls I noted the same want of the third molars. Evidently they were never developed. It is worthy of note that, in the comparatively few remains of prehistoric skulls in the above collection, there should be such a proportion of those in which the third molar does not appear. About one-fourth of the third molars were wanting. What then becomes of the theory that the wisdom teeth are becoming rudimentary and disappearing? Perhaps they disappeared once before, and reappeared again in an age of wisdom, but are now fading away, marking a decadence in that dental evidence of sage understanding.

In one case, of which I could not get a photograph, there were the remains of a mother and child lying side by side. The child had the first set of teeth complete, but there was a decided malarticulation. Whether this malformation of the inferior maxillary existed prior to death, or whether the slow accumulation of the debris of ages, or filling in of the tomb, has crowded the lower maxilla into the present malposition, I cannot say for certain. I incline, however, to the opinion, from a careful study of the case, that there must have been a malformation of the inferior maxillary prior to death. The mother, lying by the side of her child, had evidently in life lost all the inferior teeth except the two cuspids, and

the alveolar process had absorbed away, and looked precisely as we see such cases nowadays, where the poor unfortunate has worn a plate to supply the defect. In this case the superior maxillary and teeth were wanting. In none of the teeth in this collection did I discover any appearance of caries. All the teeth that were in the skulls, or parts of skulls, were sound, and splendid in form and size. Judging from the case of the mother above described, some of the missing teeth in some of the skulls may have been extracted to relieve pain, for want of proper treatment.

By the side of these Etruscan remains lie one Umbrian skeleton and ten skulls. The teeth in these skulls were very fine. Although these Umbrians preceded the Etruscan race, their heads were of the same type and size, with nothing particular to remark about them. There was an extensive collection of Umbrian domestic articles, such as safety pins, various ornaments, hammers, bridle bits for horses, the same form as that used in these modern times, and a vast number of other things. I am assured by those who have studied the subject deeply, that these Umbrians understood the principles and use of the telephone and tramway.

I must not omit to mention that in this Bologna collection there is an Egyptian mummy, in which the superior left central and lateral incisors were decayed away, and the right central about half broken down with caries. Evidently *some* Egyptians were acquainted with caries and grief. There were also numerous specimens of early Gallic teeth in this museum, from the Province of Succa, in various stages of malformation, decay and irregularity.

The most recently opened and the oldest Etruscan tomb yet discovered in Italy was lately excavated at Capadimonti, near the Lake of Bolsena. The entire contents of this tomb, including three teeth bound together with a band of pure gold, gold spiral rings for the side hair, silver finger ring, necklace of amber and glass, arm band, bronzes, vases, etc., etc., I take pleasure in sending you by first express. The part of this find of interest to our profession is the three teeth, a drawing of which I send you herewith. (See Fig. 3.) This tomb belongs to the VIth Century, B. C., or about one hundred years prior to the dates of the oldest partial denture which I sent you last year.

The manner of banding the teeth together is more primitive than the Corneto dental specimen, and marks a distinctly earlier stage of

pre-Roman dentistry. There is nothing to indicate that these three teeth were attached to any adjoining teeth, and we are left to conjecture whether they were loose natural teeth, supported by the gold band, or if the cuspid were transplanted and held in position by the gold band around the lateral and bicuspid. It is not at all improbable that the cuspid may have been a transplanted tooth, for we are sure that in those early days they had very clever surgeons, and slaves were made to serve their lords and masters in any capacity, from building grand temples and monuments to supplying teeth for transplantation. Certainly the spaces between these teeth are wide enough to satisfy the most rabid dental separatists, and the position of the teeth does not indicate that perfect regularity and symmetry were the invariable rule, even in those early days. This is significant, when we consider that the former owner of these teeth was evidently a lady of distinction, judging from the ornaments and the contents of the tomb. At least this specimen of early Etruscan dental work is of interest to us, as the oldest yet found in Italy, and as supplying one of the missing links of the dental chain we are endeavoring to trace back to the beginning of our profession.

Still older than this Etruscan specimen, I am assured by competent authorities, is the specimen of Phœnecian dentistry, a sketch of which I send you herewith. (See Fig. 4.)

This example of early dentistry is described by M. Ernest Renan, in his work, entitled "*Mission de Phénicie e le Campagne de Sidon*," page 472, Paris, 1864, as follows:

"But that which was most interesting was the upper portion of a woman's jaw, showing the two superior cuspids and four incisors, united by a gold thread. Two of these incisors seemed to have belonged to another person, and to have been placed here in order to replace the missing ones. This piece, which was found in one of the most ancient vaults, proves that the art of dentistry was pretty far advanced at Sidon, and also proves that the earth scurvy (*scorbut de terre*), so commonly seen nowadays in Sidon, existed already in those ancient times."

I am informed that this piece of Phœnecian dentistry may be seen in the Museum of the Louvre, Paris.

It will be observed that this Phœnecian example of dental handiwork marks a still earlier period in the art of dentistry than the two other styles which I have already described.

We have then the illustration of the Etruscan, 500 years B. C.,

which I sent you last year; the 600 years B. C., which I now send you, and the Phœnecian.

It is certain that dentistry must have been extensively practiced in the early history of the world, and that gold must have been used largely; otherwise the early Greek and Roman legislators would not have mentioned the matter in the celebrated laws of the twelve tables. Law 5th, *de Jure Sacrorum*, is as follows: *Quoi auro dentes vincti sient in cum ollo sepelire, se frande esto*. "If any-one's teeth have been bound together with gold, it shall not be unlawful to bury him with it" (the gold).

These twelve tables of the laws date from 447 B. C. The Romans took their laws from the celebrated Greek Solon, which takes us back to 625 B. C. The early Romans learned their dentistry from the Etruscans, and evidently the Etruscans and Greeks learned all they knew of dental art and science from the Egyptians; hence we must go back to the "mother of the arts and sciences" as the fountain head.

ON CERTAIN FERMENTATIVE PROCESSES IN THE ALIMENTARY
CANAL, AND THE MICRO-ORGANISMS BY WHICH THEY
ARE PRODUCED.

BY PROF. DR. MILLER, BERLIN.

Of the three divisions of the alimentary canal—mouth, stomach and intestines—the mouth furnishes, under many circumstances, the best conditions for the growth of micro-organisms. The juices which, in the stomach and upper part of the small intestines, oppose a powerful hindrance to the development of bacteria, are wanting in the human mouth, while at the same time the most diverse nutritive materials are there provided with free access of air and favorable temperature. The number of fungi which may develop in the human mouth is therefore very large, and limited almost alone by the concurrence of the different forms. The largest number which I have found in any one mouth at the same time is eleven, not including the well-known *Leptothrix buccalis*, *Spirochæte dentium*, and *Vibrio buccalis*, which no one has as yet succeeded in cultivating. The fermentative and putrefactive changes in the human mouth, corresponding to the large number of fungi and the favorable conditions for their development, acquire, under certain circumstances,

a high if not a dangerous intensity. In proof of this I need only to call attention to the exceedingly disagreeable, stinking odor which comes from the mouth in cases of stomatitis ulcerosa, of gangrene of the dental pulp, etc., etc., or to the fact that a slight scratch on the finger from a root in an unhealthy mouth may produce the most dangerous symptoms of blood poisoning.

Of twenty-five different kinds of bacteria which I have isolated from the secretions of the human mouth, twelve are cocci and thirteen bacilli or bacteria. It was not possible in all cases to make a distinction between bacilli and bacteria, since many kinds produce at the same time long rods (bacilli), and short rods (bacteria).

Twelve of the mouth-bacteria I found again in the fæces, and eight in the contents of the stomach. In the latter case the material for the investigations was furnished by a gentleman who could evacuate his stomach at will, an hour or two after partaking of a small quantity of fruit, particularly strawberries. Each time the oral cavity was carefully cleaned and sterilized with sublimate, one to one thousand, in order to prevent the intermixture of fungi from the mouth. That the micro-organisms really came from the stomach, and not from the mouth or œsophagus, could readily be seen by their large numbers. I have satisfied myself by repeated experiments, that in plate cultures from the saliva of a mouth which has been treated as stated above, very few, or no colonies at all, will be developed, while in the cultures from the contents of the stomach, a small drop in 5.0 cc. of gelatine would produce colonies so numerous that the separate ones were indistinguishable. Again, all organisms which were represented by only a few colonies were excluded.

It is, perhaps, allowable to take for granted that all the stomach bacteria enter the stomach along with the food; it is much less probable that they find entrance from the duodenum, although the possibility cannot be entirely excluded. It would not be permissible to assume that the intestinal bacteria all came from the stomach, since an entrance per anum is not to be overlooked, and since the stomach is supposed to present an impassable barrier for most micro-organisms. The results obtained from the experiments to be described indicate, however, that the latter is not the case, but that any fungus under a variety of conditions may readily pass the stomach without losing its power of development. The resistance of

many micro organisms to the action of the gastric juice may be readily seen from the following experiment:

About three hours after a moderate meal, 70 cc. of the contents of the stomach were evacuated and placed in the incubator under exclusion of air germs. Three hours later, by means of plate cultures, I found three kinds of bacteria, two yeast and one mould fungus, and after ten hours one bacterium form, and the yeast and mould fungi still living. Not till after the lapse of fourteen hours were all bacteria missing. The Blastomycetes and Hyphomycetes were naturally not affected by the acid. The fact that a fungus in an artificial gastric juice may lose its vitality in a short time, is no proof that the same may not safely pass through the stomach, because:—

1st. The fungi which are swallowed at the beginning of a meal do not pass into a stomach filled with gastric juice, but into an empty stomach with a neutral or alkaline reaction, where free hydrochloric acid, in detectable quantities, does not appear until after the lapse of one-half to one and one-half hours.

2d. The fungi are often imbedded in solid particles of food, thus escaping for a while the action of the juice.

3d. Liquid substances do not remain long in the stomach, but soon pass into the duodenum, and carry with them the fungi before any considerable quantity of gastric juice has been secreted. In a case of fistula in the upper part of the duodenum, Busch saw the first portions of food appear fifteen or twenty minutes after the beginning of the meal (*vid.* Hoppe Seyler, *Phys. Chem.* 326). In case of soft or liquid food, the transit may begin still sooner. The experiments of Watson, Cheyne and others, in connection with this subject, do not appear to me to be conclusive because made under conditions too little similar to those actually present in the stomach. Cheyne added material containing micro-organisms to a comparatively large quantity of artificial gastric juice, and observed that they were destroyed in a short time. Such experiments simply show that the normal gastric juice has antiseptic properties sufficiently strong to devitalize certain bacteria within a certain time. They give us, however, very little information as to the real occurrences in the stomach itself.

In order to reproduce as nearly as possible the conditions present in the normal stomach, I chewed up a quantity of bread and meat,

added a small proportion of liquid (milk), and divided the mixture into portions of 26.0 cc. each. These portions were brought into small flasks, sterilized and then infected, some with a very sensitive vibrio, the others with hardy ferment-bacteria from the stomach. To each portion was now added every ten minutes 2.0 cc. of an artificial gastric juice, containing 0.4 per cent. H. cl., (1.6 per cent. H. cl. solution of sp. gr. 1.1233), so that at the end of the second hour, the mixtures contained each 0.2 per cent. H. cl., corresponding to the most active point of normal gastric digestion, which has been determined to come at about the end of the second hour or a little later, when the acidity of the stomach has reached its highest degree. Cultures made from time to time during the course of the experiments from the different flasks showed that the least resistive of the micro-organisms experimented with retained their vitality till the end of the third half-hour, and sometimes longer, and that the less sensitive ferment-bacteria showed no diminution in number at the end of the experiment, and, in many cases, some of them were still found six to eight hours later. Inasmuch as portions of food pass into the duodenum in less than half an hour after taking food, these experiments seem to indicate that any micro-organism swallowed at the beginning of a meal might readily pass through the stomach alive. The case is somewhat different, however, if the fungi are swallowed when the digestion is at its most active stage (second and third hour). Experiments representing this stage of digestion showed that very sensitive putrefactive bacteria may thus be destroyed within ten minutes, while the hardest ferment-bacteria may resist for hours.

From these experiments the conclusion appears warranted that all fungi which are swallowed at the beginning of a meal may pass alive into the intestines, while of such as are swallowed in the second or third hour, only those which are less sensitive to the action of acids retain their vitality. If we furthermore take into consideration the various and numerous affections in which the quantity of the gastric juice or its percentage of H. cl. is abnormally small, it will appear as though the stomach affords almost no protection whatever against the entrance of pathogenic organisms into the intestinal canal, and that the condition of the intestines themselves must be looked upon as the factor which determines whether a pathogenic micro-organism, which has entered the ali-

mentary tract, shall or shall not come to development or manifest its characteristic action in the intestines. We have an exact proof that such is the case with the cholera bacillus. Koch found that, in order to make guinea-pigs susceptible to the cholera poison, it did not suffice to secure the passage of cholera bacilli into the duodenum by neutralizing the contents of the stomach, but that it was necessary first to induce an atonicity of the intestines themselves, with cessation of the peristaltic action.

It is worthy of mention that, although particles of food take up the acid with avidity, they nevertheless often appear to afford a certain protection to the micro-organisms. I have repeatedly observed in the plate cultures, that muscular fibres in particular were lined with colonies, while on other parts of the plate very few were to be seen.

(TO BE CONTINUED.)

HISTORICAL REMINISCENCES.

BY C. S. CHITTENDEN, D. D. S., L. D. S., HAMILTON, ONT.

READ BEFORE A UNION MEETING OF THE SEVENTH AND EIGHTH DISTRICT
DENTAL SOCIETIES OF THE STATE OF NEW YORK, HELD IN BUF-
FALO, OCT. 27 AND 28, 1885.

Fifty years ago, as I was walking down St. Paul street, Burlington, Vermont, with my father, I read, on a door-plate, "O. H. Saxton, Dentist." I asked what the word "dentist" meant, when my father replied: "It means a man who treats people's teeth. It is a very lucrative business, I understand," and this led me to inquire further, as to the meaning of the word lucrative.

I was then ten years of age, and had never heard of a dentist. Two years later, in 1837, I came west to visit my older brothers, one of whom, Dr. Nelson Chittenden, then of Nunda, N. Y., I found to be a dentist. I saw him cut up calves' teeth, for insertion in the mouths of his patients. I well remember how ghastly the calves' jaws looked to me. He also carved teeth from the hippopotamus tusk, and fastened them in the mouth with gold wires passing through the artificial teeth and around the natural ones, and thus

they were tolerably well fixed in the mouth. I remember his showing my father some mineral teeth, which he thought might possibly supplant those made from the teeth of animals. Nine more years passed, when I found myself again with my brother. I was then twenty-one years old, and was starting out in life. My brother, who was nineteen years my senior, advised me to study dentistry. I accepted his advice, and commenced.

I said "study" dentistry, but there was really so little to study that, practically, it meant watching him in the operating-room and the laboratory, and receiving his oral instructions. Thirty-nine years have passed since then, during which time I have heard many lectures, read many volumes, attended many dental meetings, where I have heard the best dentists in the country describe their operations, but I have seen or heard of few who performed in the mouth or in the laboratory more conscientiously or successfully than he. If he were not certain of success he refused to act at all. The only book he had for me to study was Harris' Practice, then about one-fourth its present size. He was anxious to keep abreast of the times, but there was very little to keep abreast of, as we look at the profession now. He had a set of forceps made, I think, by Bushnell, of Rochester, which were certainly strong, and able to resist any amount of force. I once asked him why he never used these forceps for extracting, when he told me that unless the teeth were very strong and solid the forceps would crush them. The turnkey was his favorite instrument, and he certainly could use it most effectually. It mattered not which, he could extract with it any tooth that could be extracted at all.

I was taught never to use amalgam, and did not till I had been in practice for quite a number of years. Gold and tin foils were the only materials employed at that time, so far as I know, for filling teeth. These were rolled into ropes, one end turned on itself, forced into a retaining point and fixed. Then another loop or turn on itself was forced down beside the first, and so on till the cavity was filled, when the whole surface would be condensed, smoothed and burnished. I doubt if I could make a good filling in that way now, but I did then, and many of the fillings of those days preserved the teeth as effectually as our more scientifically inserted ones do now. A half-dozen cherry headed drills, as many hatchet-shaped excavators, three or four incisor and as many molar files,

with a half-dozen queer-shaped filling instruments, completed the outfit for the operative department. No napkins were needed, as while it was considered rather desirable, it was not thought necessary to keep a cavity dry while filling. I remember hearing Dr. Westcott, of Syracuse, say that he had frequently seen the late Dr. C. A. Harris fill teeth without the slightest attempt to exclude the saliva.

In the mechanical department the first requisite was a pair of rollers, or, as our English friends call them, "flatters," three or four impression cups (for wax only), with a plate-punch, one or two pairs of pliers for holding gold while filing, a pair of scissors, with lead and tin for swages, and the office was complete. A lathe was a superfluity in those days. A small grinding-stone (such as is used for sharpening knives) sufficed for grinding teeth, the polishing of plates being done by hand, with pencils and sticks dipped in oil and emery. The fee for an upper or lower set of teeth on gold was fifty dollars; on silver, half that sum. So far as I can remember, the above were the fees among all the dentists for mechanical work. For filling with gold, seventy-five cents; tin or amalgam, thirty-seven and a half cents. I have no doubt that much higher fees were charged in large towns, but I am not certain.

There was but one dental college in the world at that time, and but one dental paper, viz., *The American Journal of Dental Science*. This was published regularly. Dr. E. Parmly published a paper which, so far as I can remember, was issued "from occasionally to semi-occasionally." I think it was called *The Dental Intelligencer*. I have before me the first number of the *New Dental Recorder*, dated Sept 1st, 1846. There is no name attached to it as editor or publisher, but I think Dr. C. C. Allen acted as the former, for I find his name as such in subsequent numbers. It can easily be imagined how eagerly I devoured each number as it appeared, and with what delight I read "Maury's Dental Surgery," and another by Paul B. Goddard, which I had obtained before the end of 1847. When I look over these old journals and see such names as Geo. E. Hawes, J. F. B. Flagg, Amos Westcott, W. H. Dwinelle, John Burdell, E. Parmly, E. Townsend, James Taylor, C. A. Harris, J. D. White, John Allen, E. J. Dunning, Robt. Arthur, S. P. Miller, P. B. Goddard, T. L. Buckingham, and a host of others, I feel that I am in the sere and yellow leaf. All these men did good work, not only

for their patients, but for us who are alive and remain. "There were giants in those days."

On the first of September, 1847, *The Dental News Letter*, published by Jones & White, appeared. It was a newsy, spicy journal, and reads well even now. It was continued through twelve volumes, when it was succeeded by *The Dental Cosmos*, in 1859. In 1847, our old friends, Drs. Taft and Watt, commenced *The Dental Register* (I am not quite certain that Messrs. Taft and Watt were the original editors).^{*} This journal has always done most useful work. I am delighted to know that both of these gentlemen are still in the flesh, but sorry to hear that Dr. Watt is disabled from active duty.

Many other journals sprang up and ran a short course, but as they were mostly published in the interest of some man or clique who had a whimsey to air, they lived through but few numbers.

In returning to my own personal recollections, I may say that I returned to Vermont and entered the office of Dr. Marcellus Newton, of Montpelier, in the autumn of 1847. He was one of the best manipulators of soft foil that I have ever met. I found him to be a kind, patient gentleman, who did all in his power to advance me in the knowledge of my profession, and in 1848 offered me a partnership, which I accepted, but before articles were drawn I received so great an injury to one of my feet that I was disabled from attending to business for a good many months. In 1849 I was urged by a friend to settle in Hamilton, Ont., where I have remained ever since.

I at once took possession of the office which had been occupied by the late Dr. Alvan Blakesley, of Utica, and more recently by Dr. E. S. Holmes, now of Grand Rapids, Michigan. Each of these gentlemen left a good name behind him, and for years I met evidences of their skill as dentists. Dr. Blakesley was a most excellent operative dentist, with very marked individuality about him. On commencing practice in Hamilton, I met the first amalgam fillings I had ever seen. Frequently persons wearing eight or ten amalgam fillings, all as black as could well be, would call on me for more of the same kind, but I had been too scrupulously trained to avoid all compounds containing mercury, as rank poison, to be

^{*} The first number of *The Dental Register* was issued October, 1847, as a quarterly journal, edited by James Taylor, of Cincinnati, and B. B. Brown, of St. Louis.—EDITOR.

willing to use it at all, and years passed before I could overcome my scruples. My patients were largely from the old country, where gold was, at that time, almost never employed for tooth filling; where "amalgam was the best of anything," etc., etc.; and so—well—you know it is said that—

"Vice is a monster of so frightful mien
As to be hated needs but to be seen;
Yet seen too oft, familiar with her face,
We first endure, then pity, then embrace."

—And so I fell. I have used it ever since, but conscience gives me an occasional twinge yet. I hope my son will live to see something better substituted for it.

In 1852, a Mr. Trendelmborg, of Williamsburg, introduced a preparation consisting of equal parts of calcined bone, sulphur and feldspar, pulverized, for filling teeth. The sulphur was melted and the other ingredients stirred in till the compound was sufficiently consistent. It was called "Stone Filling." As might be expected, it died in infancy.

In 1851, Dr. John Allen promulgated his system or process of mounting teeth on a platinum base. Dr. Wm. M. Hunter invented a somewhat similar process, both having continuous gums, and a war of words was carried on for a long time. In the end Allen succeeded, and no one appears to have heard of Hunter's process for years.

In the same year Dr. S. P. Hullihen, of Wheeling, Va., set forth a new system for treating exposed pulps, which he and somebody else named "Rhizodontrophy-Neurhamaxis," and yet the world revolved much as it did before.

In common with many others I "Rhizodontrophied" a great many nerves. A few did well, but the operation was so unsatisfactory that it was soon dropped. It appears that a Mr. S. P. Miller, of Worcester, Mass., discovered or invented the identical operation, which the Boston people called "Neurhamaxis," and the eastern people "Neurhamaxised" nerves for a year or two, during which the Hullihen partisans fired "Rhizodontrophy," and the Miller partisans let fly "Neurhamaxis" at each other, till it was most alarming. Both are at rest now.

In April, 1853, Mr. Alfred J. Watts, of Utica, N. Y., obtained a patent for the manufacture of sponge gold. This was the first

move in the direction of contour filling. For some time Mr. Watts was not successful in producing gold that would save teeth, and complaints were made of a blue line about the margins of the cavities filled with it, which would increase till the filling could be proved to be defective. The profession ought to raise a monument to Mr. Watts, as it was from this preparation of gold that the first adhesive foil was made.

Dr. Spooner had, some years before this, introduced the idea of destroying pulps with arsenic, and in my early dental days many dentists were in the habit of devitalizing the pulp on one day and filling it on the next, without attempting to remove the pulp at all. As a matter of course, there was trouble in most cases, so that, too, soon lost caste.

About 1854, some one suggested the idea of retaining partial sets of teeth by atmospheric pressure. I cannot remember who first proposed this method of insertion, but it met with a great deal of opposition at the outset, and did not come into general use for some years.

In 1855, Mr. J. R. Quinton, of London, Eng., introduced congelation as a local anæsthetic. Like hundreds, I invested my hard-earned dollars in two or three different forms of apparatus for producing local anæsthesia, but it was a decided failure.

In 1856, rubber was brought out as a base for artificial teeth. Probably no one appliance pertaining to dentistry has ever been received and adopted by the profession so universally as this one. It is *the base* which is found where artificial teeth are inserted. In the same year Blandy's cheoplastic method of mounting artificial teeth was given to the public. It had its advantages for lower sets, but rubber soon pushed it to one side.

In the early part of 1857, Dr. Harvey Burdell was found dead in his office, having been murdered by some unknown person during the previous night. His taking off created a great sensation at the time, but no definite solution of the cause or manner has ever been made.

In the same year Dr. Robt. Arthur informed the profession that he had discovered a simple method of keeping proximate cavities dry while operating, which was to cut off a piece of rubber tubing, such as is used in regulating teeth, and slip it over the crown, and up or down on the neck of the tooth to be filled, thus forcing the

gums away. It was a move in the right direction. It was in this same year that Slayton's colored gutta-percha base for artificial teeth was brought out. Of all the innumerable humbugs that have been imposed on the profession this was about the biggest.

I ought to have stated that the American Dental Convention was formed, or rather organized, at Philadelphia during the 2d, 3d and 4th days of August, 1855. I felt a little curiosity to look over the list of names of those who attended that convention, and was surprised to find only one name from Western New York, viz., Dr. Fenn, of Rochester.

This meeting had been called by a committee of members of the profession, which met at Philadelphia during the previous year. A constitution had been formed, and everything so carefully prepared by the committee that the convention was born and ready for action on the day of its birth.

In 1856, the convention met in Hope Chapel, New York, on the 6th of August, and continued in session through the 7th and 8th. I find no names from Western New York, except L. D. Walter, of Lockport, B. R. McGregor, of Rochester, and S. B. Palmer, of Tully.

In 1857, the convention met in Boston, at which meeting no Western New York men were present, except our old friend, Dr. Palmer.

The year 1859 is the most memorable one in the annals of dental science. On the 3d of August, of that year, delegates from the Cincinnati Dental Association, Ohio College of Dental Surgery, Mississippi Valley Association, Ohio Dental College Association, Pennsylvania College of Dental Surgery, Western Dental Association, Penn. Association of Dental Surgeons, Indiana State Dental Association, St. Louis Dental Association, and Pittsburg Dental Association met at Niagara Falls, "to determine upon the expediency of forming a National Dental Association upon a representative basis," and, although a meeting of the dentists of New York city, held during the previous month, passed resolutions protesting against the formation of such an association, declaring that the American Dental Convention was all that was required, the delegates proceeded to, and did, form the American Dental Association. Meetings have been held annually since, with the exception of the first year of the late war, 1861. The work performed by the Asso-

ciation has been most extensive and valuable, and is as familiar to you as to me. The Dental Convention, too, proved most useful, but in another direction.

In January, 1867, Dr. B. W. Day, of Kingston, Ont., called a meeting of the dentists of the Province, at Toronto, for the purpose of asking the legislature to incorporate the profession. As only seven responded to the call, those present formed themselves into a dental society. A committee was appointed to draft a bill, which was to be laid before a meeting of the dentists of the Province, to be held at Cobourg in the following July. The meeting at Cobourg was well attended; the draft of the bill was fully considered, and eight persons were recommended to Parliament to represent the profession on the Board of Examiners. Let it be remembered that this was the first attempt at dental legislation.* As it had to be, in the nature of things, a popular measure with the profession in order to get it passed at all, the wonder is that it is as good a bill as it is. It is awkward in many of its provisions, and hard to be understood in others, still I think it is the best dental act in existence. Petitions poured into the legislature from many quarters against the passage of the act. The promoters were at times greatly discouraged, but, as "All's well that ends well," on the last night of the session the bill was read a third time and passed. It is not necessary to add more on the subject than to say that the act has been very successfully carried out from the first, and that there are now very few practicing illegally in the Province. Since the passage of the Ontario act, the Province of Quebec, England, several of the Continental States of Europe, and most of the different States of the American Union have legislated upon the subject of dental practice; but whether the profession stands in a better position now than it did previous to any legislation, is a matter of question which time alone can decide.

I cannot close this paper without speaking of the different manners of dentists in my early dental life, and now. Then, if you called on a brother practitioner he would treat you as an interloper, and if you proposed to speak on matters dental, he would tell you (as I have been told) that "no information can be obtained from me without pay." Now, we meet like brothers, and consult

* The State of Alabama had upon her statute books a very stringent dental law, which antedates that of Canada by nearly ten years.—EDITOR.

on the best methods of procedure. The dentists of to-day can well quote Mark Twain's saying—"the amount that the ancients didn't know is voluminous"—and not be far astray, and yet they did a great deal of good work, when the appliances they possessed are taken into consideration. Let me speak of a few of those which we consider perfectly indispensable now, but which were unknown in my early life: The operating chair, with all its conveniences; the lathe; napkins; duct compressors; the hand, the automatic, and the electric mallets; the dental engine in its various forms; the rubber dam; the different adhesive forms of gold; and many, many other appliances of minor yet of great importance to the dental operator. The profession at large owes a debt to the old Western New York Society, as a great number of these appliances are the inventions of some of its members. From one, dental colleges have become legions, almost. Dental societies have sprung up all over the land. Dental journals, from one or two small quarterlies then, to numerous large, well-edited periodicals of the present. Then, the dentist was scorned by the physicians; now, he is treated like a brother, and there seems little doubt that the dentist of the near future will be an acknowledged specialist of the medical profession.

THE PERILS OF PRACTICE.

PRESIDENT'S ADDRESS, DELIVERED BEFORE THE CONNECTICUT VALLEY DENTAL SOCIETY AT ITS TWENTY-SECOND ANNUAL MEETING, HELD IN SPRINGFIELD, MASS., NOV. 5 AND 6, 1885.

BY GEO. L. PARMELE, M. D., D. M. D., HARTFORD, CONN.

As an apt introduction and illustration of the ideas to which I wish to call your attention, let me repeat something read the other day.

"When a small boy, I was carrying a not very large ladder, when there was a crash. An unlucky movement had brought the rear end of my ladder against a window. Instead of scolding me, my father made me stop, and said very quietly: 'Look here, my son! there is one thing I wish you to remember, and it is that every ladder has two ends.' I never have forgotten it, though many years have gone by.

Do we not carry many things that have two ends besides ladders? Ah yes, every ladder has two ends, and it is a thing to be remembered in more ways than one."

Now gentlemen, even the ladder of dental practice has two ends, and one of them, that one to which many of you give too little heed, needs your careful attention. The end of the ladder where the rounds are composed of long, worrying, tedious hours, spent in close offices, making contortionists of yourselves in the earnest endeavor to ease and prevent the sufferings of others, and at the same time striving not to waste a moment in which you can earn reputation and an honest penny, you know all about; of that I need say nothing. But it is of that end of the ladder which points to a proper care of your own physical condition, both in the office and out in the pure air, that I wish you to think. That is the end to which, if neglected, a loud crash will sooner or later call your attention.

I do not wish to imply that you are not conscious of the other end of the ladder, neither is it my purpose to instruct as to the hygiene of professional life, with the laws of which you must be acquainted, but to remind the thoughtless that they cannot go on transgressing these laws without paying the penalty. No one will deny, I think, that maintenance of the body and mind in as nearly a normal condition as possible is worthy of more consideration than many of us give it.

The confinement in poorly ventilated rooms, breathing air poisoned by the exhalations of patients, many of them victims of disease, working for hours at a time in constrained positions, inflicting necessary pain on nervous patients, which, to a greater or less extent, causes nerve exhaustion in the operator, and the continuous concentration of vision upon minute objects, together with the constant worry and perplexity of business, are some of the reasons why those conscientiously engaged in dental practice will sooner or later break down, unless they take means to counteract these baneful influences.

One of the greatest evils of modern life is mental overwork, and there is no constitution so adamant as to resist continuous confinement, weariness and worry. Work and play must alternate, for nature too severely tried is sure to call the balance and enforce a settlement. The adage "all work and no play makes Jack a dull

boy" is one of those common sayings which we are bound to accept, whether we like it or not. Each violent emotion or train of thought operates upon the nutrition of the nerve centres, and continued worry and passion are more harmful than judicious hard labor.

With telegrams to keep them upon the *qui vive*, and express trains to hurry them hither and thither, Americans live at too high pressure. The influence of active competition is such that they think a holiday or outing cannot be afforded to relieve them of that intense, unremitting application, which leads to mental strain.

Members of our profession are no exception, and I frequently hear them say, "I cannot afford to lose the time." There is nothing they can better afford to do. The time spent in frequent outings, breathing "God's oxygen," is not lost, for owing to renewed vigor complete restitution is obtained for the seeming loss of time, by the larger amount and better quality of work accomplished in the remaining hours of labor. "I have sinned against my brother, the ass" (referring to his abused body), were the last words of St. Francis, of Assisi, when his self-inflicted martyrdom brought him to death's door.

We should all make a business of pleasure and recreation of mind and body. All medical men, who have given the subject any thought, agree as to the increase of nervousness in Americans, due to the chronic habit of constant excitement and push in our daily life, at home and abroad, sick or well. To hit the happy medium between under and overwork is no easy task. Many are injured by too little work. When what was once considered a cheerful task requires an extra effort for its accomplishment, and, as a direct outcome of a worried and flagging brain, errors and omissions commence to manifest themselves, it is a sad mistake to spur up the exhausted brain to increased vigor by artificial means. "That which one desires to do must not be his guide, but that which he has power to do."

So long as a brain worker can eat and sleep well, and takes abundant exercise in the open air, it is not necessary to impose special limits to his working hours. But when one begins to worry over business affairs, and about the numerous personal perplexities which we can seldom escape, his brain constantly contriving some

way out of the difficulties which beset him admits of no quiet for sleep. Lack of the necessary rest soon disturbs the nervous system, and is quickly followed by dyspepsia and fits of depression, two of the principle miseries of an overworked body.

After all, it is worry that does the harm rather than work. I once heard the late Dr. Beard say that the three W's, Wine, Women and Worry, were the most fruitful causes of nervous shipwreck and insanity. I would not have you infer that I desire to picture dentistry as the most onerous of all labor, or that all who enter upon it are on a sure road to an early grave. Far from it, for I believe a properly conducted dental practice is one of the most pleasant of all special fields of labor. Still, there are circumstances connected with it which tend to render it particularly dangerous to those who go at it with too much push, and who neglect every hygienic law. The same amount of push would be much less injurious in many other occupations.

You all ought to know "what to do to be saved" better than I can tell you, and it seems unnecessary for me to lay down the laws of health. I only wish to spur up those who need it to a proper observance of those laws, and particularly to urge them to shorten their office hours, to take frequent holidays and outings, to devote themselves to some hobby which requires active exercise in the open air, and, in fact, for those inclined to overdo, I advise a cultivation of laziness as to business, and activity in all open air life.

The surest of all prophylactics is active exercise in the open air. Air is a part of our daily food, and by far the most important, the purity of our blood depending upon it. Jean Paul says: "On the day of judgment God will perhaps pardon you for starving your children when bread was dear, but if he should charge you with stinting them in his free air, what answer shall you make?"

Physical exercise, by accelerating the circulation of the blood, stimulates the activity of all those internal organs whose functions conjointly constitute the phenomena of life, and counteracts innumerable functional disorders, any one of which is sure to react on the nervous system.

Mirth is of value as a remedy. Men of a cheerful disposition are generally long lived, and anything tending to counteract the influence of worry and discontent contributes directly toward the preservation of health.

See to it that your offices and homes are in a proper sanitary condition, and let me suggest, where practicable, a reversal of the general rule, and that you make your operating rooms large and airy, and your reception rooms, if necessary, the smaller of the two.

Never eat until you have time to digest, for we are not nourished by what we eat, but by that which we assimilate.

Plenty of rest after meals is a good health rule. Wild animals, in obedience to instinct, seek out their hiding places after a heavy meal, and digest in peace. Let us follow their example. Digestion requires leisure. By attempting work while the stomach is full, we are not only unjust to ourselves, but to the labor we desire to perform.

In closing, I thank you for so patiently listening to this brief and unsatisfactory address. Let me also once more thank you for the compliment shown in bestowing upon me the highest honor in the power of this society. I feel deeply conscious of duties unfulfilled, for which I ask your forgiveness, but it is a pleasure to think that when I resign this chair it will be to one whom I feel sure will not disappoint your most sanguine expectations.

TIN AND GOLD COMBINED.

BY J. H. SPALDING, D. D. S.

LECTURER ON MEDICAL AND SURGICAL DENTISTRY IN THE MINNESOTA HOSPITAL COLLEGE.

I am very much pleased to see that so representative a man in our profession in America as Dr. A. W. Harlan, of Chicago, has joined the ranks of those who have learned the value of tin and gold combined, as a filling material, and has become its advocate.

From time to time articles have appeared in the dental journals from such men as Abbott, Jenkins, Miller, Sachs, and others, of Germany, setting forth the advantages possessed by this combination for filling teeth, giving their experience in its use and recommending its many virtues, but little heed has been given by practitioners in this country, because, like the Pharisees of old, they thought no good thing could possibly come out of this Nazareth. Whatever was not distinctively American in dentistry has been deemed of no value, and has merited no consideration. For the past year I have been fighting the battles of tin and gold in this region, and have

not as yet succeeded in stirring up even a spirit of investigation among my colleagues, as to its merits. I think no one has tried it. From our English ancestors we have inherited so much of that insular prejudice, the very name of which is derived from the British islands, that whatever is mentioned as having any extensive use or advocacy abroad, is looked upon as unworthy the attention of an American dentist, even in Minnesota. The glory of American dentistry is indeed great, but we must not let our pride in our achievements blind us to whatever is good, even though it emanate from another country. While in Germany, two years ago, I learned to use this combination of metals, and had abundant opportunity, during my year of practice there, to see fillings of this material, and I am free to say that I was so convinced of its immense value as a means of saving a large class of teeth, that I have used it ever since, mostly to the exclusion of amalgam, except in the most out of the way and inaccessible cavities.

It possesses all the qualities mentioned by Dr. Harlan in his article in the October number of this journal, and in addition I will mention that it slightly expands; and by reason of some change (molecular or chemical?) taking place shortly after insertion, it becomes almost as hard as the densest amalgam. This latter quality appears to be more strongly manifested when it is inserted under moisture. This is the secret of Dr. Harlan's remark, that "it is capable of resisting mastication in an astonishing manner," for these fillings have all the soft and yielding qualities of tin alone, when first completed. These two qualities, together with its ease and rapidity of insertion and freedom from injury by moisture, render this combination one of our most valuable adjuncts in the saving of teeth. The instructions given by Dr. Harlan, as to its preparation and use, are comprehensive and clear, the only objection being that he mentions using instruments mostly "wedge-shaped or three-cornered." I have found that I can do better work with these metals by having instruments entirely devoid of corners. Mine are blunt, wedge-shaped, rather large-size points, with longitudinal serrations, having no corners to tear the ribbons or ropes.

There are other materials in use in Europe, which are of European manufacture, and which American practitioners could adopt and make use of without detracting from the dignity of American dentistry. I speak of the copper amalgam (known also as Sullivan's

cement), and of Poulson's or Rostaing's cements. Where it is necessary to use amalgam at all, this common copper amalgam is incomparably superior to all the mis-named "Gold and Platina Alloys," and "non-discolorable" trash of the American market. If we are to use amalgam, let us do so for a therapeutical purpose, not as a mere mechanical stopping of a hole, for we have other materials at hand which are mechanically superior, and in all respects quite equal as to cheapness and rapidity of insertion.

Regarding the cements spoken of, my own experience and observation confirm the statements of all Americans in practice in Europe, with whom I have conversed, that there is no cement of American manufacture that at all approaches either Poulson's Mineral Plombe or Rostaing's Cement, for all uses where cements are admissible. They disintegrate less at the cervical margins, are denser and more firmly adherent to the walls of cavities, than any other cements with which I am familiar.

"Prove all things; hold fast to that which is good," is useful advice for the dentists of America to follow, and whether the thing to be proven be American or foreign, we should not be prejudiced against it. I cannot close without again reverting to my subject, Tin and Gold Combined, and urging a trial of its merits, feeling confident that it will be found to possess qualities eminently superior to those of any other material now in use for many classes of fillings.

NOTE.—Dr. Spalding is a positive man and speaks positively, but we do not think that he desires to be understood as utterly condemning all of the cements and amalgams of American manufacture. Some of these are very good, though there are many that are worthless. Sullivan's copper amalgam possesses good qualities, but all Europe, even, is not convinced of its superlative excellence.—EDITOR.

VERRIER'S AND SCHILTSKY'S CONTINUOUS GUM METHODS.

BY DR. A. WITZEL.

READ AT THE THIRTEENTH ANNUAL MEETING OF THE AMERICAN DENTAL SOCIETY OF EUROPE, BERLIN, AUGUST, 1885.

Continuous gum-work, which I consider to be the most difficult but most artistic that can be done in mechanical dentistry, has unfortunately found its way into only a few dental laboratories. The necessity of having specially prepared teeth for this work has, for many practitioners, been a great objection. In experimenting

with various teeth and different preparations of gum body and enamel, I have been lead to the conclusion that great improvements may be made in this direction. Also the different ingeniously invented furnaces leave much to be desired. I have found the one muffle furnace, with the annealing stand of Mr. B. A. Verrier, to give in my hands the best results. Not having a very large selection of continuous gum teeth, I have been obliged to use the ordinary plate teeth prepared for metal plates. These I have successfully employed in the following manner:

After the teeth are fastened with wax on their labial side to the well fitted and roughened platinum plate, I insert the whole in equal parts of plaster and asbestos, so that only the labial side remains free. After removing the wax with boiling water, I replace it with Dr. Allen's gum body, and fire it in the usual way. After the second baking, I remove the investment, turn the rim with a burnisher, and fill up any defects behind the teeth with gum body. Then I generally put a fresh investment of plaster and asbestos on the palatine side.

To get the right temperature for baking the gum enamel has been another great difficulty; but by using Mr. Verrier's furnace with the right pressure of gas, working Mr. Fletcher's foot bellows at the same rate, watching the time required to melt the gum enamel after the melting point of a piece of pure gold which I put in the muffle with the piece to be fired has been reached, I always get equally good results in from ten to twelve minutes.

After the investment is removed, and when I wish to strengthen the continuous gum facing before vulcanizing, I solder a piece of 18 K. wire to the backs of the teeth. By the use of the much more fusible gum body and enamel made by Mr. O. Schiltsky, of Berlin, I have been able to make a few nice partial pieces with any kind of teeth. But the great amount of shrinkage, the color and glassy appearance of this composition, leave me to give the preference to Dr. Allen's preparation. The small muffles of Mr. O. Schiltsky's furnace allow only the manufacture of blocks, which is also a great disadvantage. However, if we compare the disadvantages of both compositions with their usefulness, I consider that no well mounted laboratory should be without the one or the other, and with sufficient practice I am sure that the difficulties of continuous gum working will soon be conquered.

EDITORS AND EDITING.

BY GARRETT NEWKIRK, M. D., CHICAGO, ILL.

Dr. Cushing is about right.* We do not have enough editing. Not long since the *New York Tribune* made some keen criticisms upon the Chicago papers, the big "blanket sheets," to this effect: that in the truest sense they were not edited; that the business of an editor was to cull, sift, cut down, change, and make presentable the materials offered. The "blanket" sheets, it was said, were simply masses, gathered into an indiscriminate pile, slung together, etc. The editor shirked his responsibilities, and forced the reader to do the sifting at a great waste of time, and often to his disgust. I do not know of any dental or medical journal so poorly edited as are some of our dailies. There is none better than the *INDEPENDENT PRACTITIONER*, yet there is still an application in the *Tribune's* remarks.

It is the editor's business to *edit*. According to Webster, the editor not only collects matter, but he is "*especially one who prepares, superintends, revises, and corrects a book, magazine, newspaper, etc., for publication.*" Something may be offered which demands publication, but which is manifestly wrong in part, with perhaps mischievous tendencies. If the editor thinks the world would be no better off for its publication, he should cast it out. If he thinks the world would be benefited by revision, correction or elimination, he should insist upon exercising his prerogative. A part of the subscription price paid the journal is for *editing*; the subscribers pays for having matter presented in the best shape possible, according to the editor's judgment. The feelings of the author of an article have nothing to do with the affair. It is the value of the matter itself that is to be considered. When questionable doctrines are published as parts of papers, otherwise good, the editor should, as Dr. Cushing suggests, make some editorial comment, or see to it that some one else makes a fair criticism, instead of letting such matter go forth, as it often does, unquestioned.

* See the *INDEPENDENT PRACTITIONER* for December, 1885. The editor has exercised his prerogative in omitting from Dr. Newkirk's manuscript some of the complimentary passages.

Reports of Society Meetings.

AMERICAN DENTAL ASSOCIATION.

TWENTY-FIFTH ANNUAL MEETING, HELD AT MINNEAPOLIS, MINN.,
AUGUST 4, 5, 6, AND 7, 1885.

REPORTED FOR THE INDEPENDENT PRACTITIONER BY "MRS. M. W. J."

(Continued from page 31.)

THURSDAY AFTERNOON SESSION.

Dr. Wm. H. Atkinson read a paper entitled "Pyorrhœa and Sponge-grafting," of which the following is an imperfect abstract:

He said that correct diagnosis was the first prerequisite; that there was no real pyorrhœa without loss of attachment of the *ligamentum dentium*; a flow of pus was always an evidence of nature's failure to form new tissues. Pyorrhœa was cured by destroying the microbes which prevent granulation; that an imperfect elimination of urea was an antecedent of pyorrhœa; that traumatic pyorrhœa was the resultant of the presence of foreign bodies in the alveolus, as particles of bone, splinters of wood, etc. These must be removed and the pockets sterilized. Calcaerous deposits were not always present, but if they were they must be removed and their re-formation prevented. Many parasiticides which would destroy microbes would form eschar tissue, changing pabulum into cooked flesh. Nitrate of silver would afford protection by supplying an outer wall. Non-sterilized pockets might discharge pus for an indefinite length of time. There is lack of knowledge of molecular changes. His object in writing was to state the results of his experience. He would prescribe tonics, as sulphate of quinine. For local treatment:—

1st. When there is slight recession, and no discharge, use elixir vitriol.

2d. When the loss of attachment is greater, use Aqua Regia, 1 to 3.

3d. Where the loss is very great, the gums dark, with discharge of pus and bloody serum, use the carbolized potash paste, known as Robinson's Remedy, not allowing it to overflow on the lips or cheek.

4th. When the roots are largely exposed, and there is no opportunity for covering in the pockets to induce new growth, use the sponge-graft. This is a recent discovery, of which little is generally understood, but than which there is nothing of greater value. It grew out of the misfortunes of traumatic lesions, having been first used by obstetricians to supply gaps caused by violent labor. The sponge is wrung out of bi-chloride of mercury. Tents must be removed and changed, but the sponge remains permanently. We have advanced by stages from the actual cautery, boiling oil, red-hot iron, for the arrest of hemorrhage, followed by the irrigation and drainage of wounds, to the transplanted skin and epithelial tissue. This suggested some material to take the place of lost substance. Many forms of animal sutures and flesh tents were used, but these were generally extruded and cut off. It is not true, however, that chicken flesh, etc., was ever used to fill gaps. Sterilization or Listerism was a great step in advance. Then came the sponge graft. A gaping wound, filled with sterilized sponge, and covered over with plaster to support and prevent exudation of blood and serum, will heal by first intention if left undisturbed. All germs must be destroyed. There is a large list of germicides, but bi-chloride of mercury is the best. Proper discrimination must be used in judging of the favorable or unfavorable progress of the healing process.

Dr. J. S. Marshall—Wished to ask Dr. Atkinson how to protect the sponge-graft after it was placed in position in the mouth for the cure of loss of substance by pyorrhœa.

Dr. Atkinson—After thorough removal of all deposits, tie loose teeth firmly, having the occlusion perfect; then take an impression and make a cast. Wherever the tissue is missing build it up with wax, rather higher than the new growth is wanted. Make a cast and strike up a plate, making a tight pocket which will fit the teeth closely and prevent anything from escaping; put the sterilized sponge inside of this pocket. In larger places, as from removal of tumors or morbid growths, cover in with flaps of skin, leaving the clot of exudation. It does not form scar-tissue. It is reproduced tissue. Do not undertake to buy sterilized sponge. Buy surgeon's fine sponge, see that it is free from all foreign elements, and sterilize by dipping in a solution of one grain of bi-chloride of mercury to one ounce of distilled water at 130° Fahrenheit. At or above 133°

the sponge will shrivel, and 160° will cook it, so that it is not fit to use, as the living material that is designed to be absorbed is killed. If the sponge is not thoroughly sterilized the wound will not heal by first intention. Do not remove the sponge for any cause whatever. If pus should ooze from one corner, or the sponge get black or green, and hard, where pabulum has not penetrated, wipe off the serum, and with fine pointed scissors cut off the discolored portions till red pabulum (arterial blood) is reached. Sterilize the sponge again, fitting a little bit into the vacant space, not disturbing the adhering portions. Use simple common sense. Any man that can fill a tooth can be a good surgeon.

Dr. Marshall—Said that in his previous attempts the sponge would get displaced from the pyorrhœa pockets, and he had almost concluded that the graft was useless. With Dr. Atkinson's method, as just described, he had no doubt of success in the future. He had tried Dr. Brigg's method of preparing the sponge by placing it in dilute hydrochloric acid, treating with ether and iodoform, but the sponge dissolved and was good for nothing. In certain forms of perforation, or cleft palate, he thought the sponge-graft might be practical and valuable.

Dr. Friedrichs—Inquired if it would not be necessary to denude the surface.

Dr. Marshall—Of course. That has to be done in every case.

Dr. Abbott—Said that he was pleased to show the method of using his Spray instrument for applying remedies in the mouth, with which they could be thrown wherever desired, as back of the soft palate, up into the posterior nares, etc. In abscess of the antrum, remedies could be applied directly to every point of the cavity; in case of hypertrophy, there were more or less layers in the mucous membrane discharging pus. These should all be cleansed; the syringe could only wash off the surface, while this instrument would carry it in every direction at the same time, filling the cavity full. Dr. Farrar had invented a syringe with similar points, but this was a more simple and more certain way of applying remedies, as the spray had intense force. In using remedies that were liable to crystallize, as the boracic acid of listerine, water must be drawn through after each application, for cleansing. The instrument is not confined to the use of listerine. Any liquid can be used. It has sixty pounds' pressure, and is invaluable for

the treatment of diseases of the antrum. It is valuable for blowing chips from the cavity, as it gives a continuous stream of air ; it is also excellent for local anæsthetizing, the tooth being rendered insensible to pain in a moment's time.

Dr. Taft—Suggested its use with the warm air blow-pipe.

Dr. Abbott—Replied that an alcohol lamp or gas jet could be introduced underneath for keeping the air warm, heating compressed air not increasing its force, even if raised to 120° or 140°.

Dr. Tuft—Said that 200° would increase its tensity, and it would be as well to advise caution, and not to go above a certain temperature.

Dr. Abbott—Said there would be no risk, as it would never be necessary to go above the heat of the body.

Adjourned to 8 P. M.

THURSDAY EVENING SESSION.

Dr. Kulp asked for information concerning the section of Dental and Oral Surgery of the International Medical Congress.

Dr. Allport, chairman of the committee, replied.

After some discussion the subject was postponed.

A letter was read from Dr. Clifton, of Waco, Texas, thanking the members of the Association for kind attentions and sympathy at the time of the accident to his little son during the Saratoga meeting.

On motion, Section VI was passed.

Section I, Prosthetic Dentistry, Metallurgy and Chemistry, was called.

Dr. Wm. H. Trueman presented a paper on "A New Method of Flasking Vulcanite Rubber Work," a method which offers advantages in cleanliness, saving of time, and safety of teeth, especially in difficult partial cases. By the original English method the work was invested in steatine or soap-stone. Dr. J. Speyer, of Philadelphia, has modified the method, using the patented "Surface Cohesion Forms," a prepared tin foil, similar to that used for stipple-work, or for securing a clean, bright palatal surface. The forms are embossed with geometrical figures, which leaves a network of continuous channels, instead of a central suction cavity. This gives firmer adhesion, causes less irritation to the mucus surface, and allows a much smaller plate; even if the plate tilts the suction is not entirely lost. The portion of the model to be covered with the form is thickly painted with a cement made of vulcanizable rubber dissolved

in chloroform to the thickness of a heavy syrup, the foil being pressed down till all the indentations are filled with the cement, which prevents crushing out of shape in packing. Rubber softened in hot water is used in mounting the teeth, instead of wax or gutta-percha base plates, small bits of softened rubber and the cement being packed in around the teeth and pins. The rubber is built up to the proper size and shape, and finished as wax is generally used. It is then invested in plaster, without allowance for opening the flask, as there is no wax to be removed, and the cover screwed down before the plaster sets, when it is ready for the vulcanizer. While time and labor are saved, and cleanliness insured, the method has the great disadvantage of not allowing of trial in the mouth until finished.

The rubber dissolved in chloroform forms a cement which is valuable for many purposes, as for repairing bulbs of syringes, etc.

Dr. L. P. Haskell read a paper entitled "What to Do and How to Do it." He said that many dentists did not appear to appreciate the vast difference in mouths. A patient will ask why her teeth are not as easily made satisfactory as those of Mrs. Blank. She evidently thinks the difference lies in the dentist, but it is more probably due to the difference in mouths. As we all know, some mouths are very easy to fit, while others require great care and skill and study, and the wearer is required to exercise great patience in learning to use the plate. When there is a firm ridge, not deep, the palatal surface not hard, the lower jaw not protruding, but striking fairly under, there will be no trouble in putting in a satisfactory plate. But the contrary may be the case in some or all points, as when there has been great absorption, with flexible ridge; and this condition we find, to a fearful extent, under vulcanized rubber plates by which thousands of mouths have been ruined; the better the adaption the worse will be the results. When the plate is loose-fitting less damage is done; where the suction is perfect, an abnormal condition prevails from undue retention of heat. It is not correct to say that the process is absorbed; it is simply that waste material is not replaced. For this reason rubber plates are doing incalculable damage; the Alveolar process is often entirely gone, and the plate rests upon the muscles and soft tissues.

Skill must be used in fitting the plate and in antagonizing the teeth. Many plates are apparently worthless, simply from faulty

antagonizing, which a little skillful grinding would make quite useful and comfortable. All conditions of the mouth are found ranging between the two extremes. In preparing the mouth for artificial teeth, the extraction of the remaining teeth is a point requiring especial consideration. While it is true that it is the province of the dentist to save the natural teeth, when the time has come that the patient must wear some artificial teeth the question arises, shall it be a full or a partial set, when the former involves the extraction of some remaining teeth? A safe rule to follow is to remove whatever will interfere with the comfort and utility of the plate, throwing aside all sentiment regarding sound teeth, if they are in the way of making the plate completely comfortable and useful. As to the material for the plate, rubber is universally used the world over, because it is cheap and easily made. Any young man can learn to make a rubber plate in a few weeks; in a few weeks more he learns to insert amalgam fillings in simple cavities, and this constitutes the whole stock-in-trade of many who call themselves dentists. Metals, being good conductors of heat, are preferable in the mouth. When undue absorption takes place under a metal plate, as is sometimes the case, it will be found that there has been undue pressure in front, but this is exceptional. Whenever it is possible, a patient should be induced to have a metal plate. You may say that you have no demand for metal plates. You must create the demand. Ask the average patient what kind of a plate he wants, and, as a rule, he will answer, rubber. Ask him why he wants rubber, and you will find that he seldom has any better reason than because all his friends wear it. Explain to him that it is not the best, and why it is not the best, though the cheapest, and he will probably understand that the cheapest is not the best in teeth, any more than in clothing, though it is true that many who want only the very best that money can buy in clothing will go shopping to find the cheapest in dentistry.

For taking impressions, various substitutes for plaster are being used, as modeling compound, wax, etc., but for a perfectly correct impression, plaster is the only material that is absolutely reliable, and everything depends upon a correct impression. I use no air-chambers, but swage the plate up to the palate in every case. I recently saw a number of old patients who were wearing plates that I put in twenty or twenty-five years ago. In every case they were

swaged up to the palate, and the alveolar process was as solid and the mouth as healthy as on the day they were put in. But of late years we find many mouths in which the process is entirely gone, and only a flexible tissue left. In such cases I raise the cast slightly in the center, with a thin film of wax, scraping out a little when necessary to make the plate set snug in the soft parts. There is but one metal that possesses all the requisites for dies, and that is genuine Babbitt metal. It has the necessary hardness, smoothness, and toughness, but you must be sure that it is Babbitt metal. If it is offered for twenty-five or thirty cents per pound, it is worthless. Lead has been substituted for tin, which makes it too soft. That made by S. S. White, or Justi, is good. The formula is 1 part copper, 2 parts antimony, and 8 parts tin. For the counter die one-eighth of tin must be added to the pure lead, or it will soften and adhere. You will seldom have to make a second die if your materials are right. One die will swage it to fit accurately. When the die fits the plaster cast, it will also fit the mouth.

Dr. Haskell said that he considered that Bridgework, or the system of teeth without plates, was doing incalculable injury. It was impossible that a plate permanently attached to the natural teeth should be otherwise than uncleanly. If placed under the nose when removed for repairs, it would be found absolutely disgusting. The teeth to which the gold band of the bridgework was attached with cement must inevitably loosen and disintegrate. It was impossible to prevent the secretions of the mouth from going there to stay, and the teeth of attachment would soon be girdled with decay, and loosened in the jaw. The method exhibited by Dr. Parmly Brown was the least objectionable, and might be admissible in some cases, but even that might be carried to extremes, and a long bridge would inevitably go at last. There was no necessity for it, except occasionally as a last resort, but in the majority of cases a narrow gold plate, with properly adjusted clasps, which could readily be removed and kept clean, would answer every purpose, and would do no harm and occasion no strain on the natural teeth.

Dr. W. B. Ames—Said there were but two methods of retaining upper plates: spiral springs, which were no longer used, and atmospheric pressure. The usual form of a large chamber over the center of the palate afforded unequal support, while the tissues soon

filled the cavity. The plate should be so constructed as to equalize the bearing, atmospheric pressure being applied just where needed. Trimming the cast was not sufficient, but the plate must extend to a point where the edges will displace the soft tissues, running well up beneath the lip and cheeks, so as to lie snugly on the edge. Instead of raising the center, as described by Dr. Haskell, he would trim away where soft, leaving a groove across the portion of the plate where the tissues are lax. If this can not be tolerated because of nausea, he would use a soft rubber edge.

Dr. Wm. H. Morgan—Wished to notice one or two fundamental errors. He did not appear as the champion of rubber, which was a poor article for a base, causing troubles which would not occur with a gold plate. The first speaker from Chicago left the inference that the damage done by rubber was attributable to undue heat. This was a mistake. The mucus membrane does not eliminate heat; it could not get above blood-heat, unless there was inflammation; it could not eliminate enough heat to raise the temperature of the mouth above that of the body. The idea of undue heat was a wrong impression. There is always irritation and inflammation preceding abnormal heat. We must go back of that for the production of loose tissues in the front of the mouth. Again, it was said that all the natural teeth should be removed that would interfere with the artificial denture. The contrary should be the rule. The comfort and utility of the natural teeth should be considered, and the plate made to conform to them.

Dr. W. P. Horton—Asked Dr. Morgan to explain the production of the loose tissues.

Dr. Morgan—We do not know. It is true that it is worse under rubber plates, but it is not from undue heat.

Dr. Atkinson—The gentlemen who so unqualifiedly condemn bridgework have not seen it properly constructed, or they would speak differently. Perfect bridgework, intelligently attached, is as cleanly as anything possibly can be. Rubber first anæsthetizes the sensitive membranes, and then paralyzes the sensory nerves; it allows the blood to flow in and form little lakes, destroying the lime-salts. If we knew what we were about, we would have no difficulty with shopping-people in our offices. I want my patients to regard me as an honest man, with a conscience. I say to them: "I will do the clean thing by you, as I am an honest man; love

me well enough to believe that I will do what is right." People do not want nasty things in their mouths, and rubber is nasty beyond all things.

Dr. Haskell—Dr. Atkinson has answered Dr. Morgan admirably. As regards bridgework I excepted the method advocated by Dr. Atkinson, as practiced by Dr. E. Parmly Brown, it being cleanly if properly inserted.

Dr. Morgan (to Dr. Atkinson)—Did you say there could be heat above the normal, without irritation?

Dr. Atkinson—No. There is always irritation and inflammation under a rubber plate.

Dr. C. W. Spalding—If you will take the trouble to test the actual temperature under a rubber plate, and under a gold plate, you will not find four degrees of difference. Anyone can make the test and satisfy himself.

Dr. T. W. Brophy—It was well said that the tissue becomes inflamed under rubber plates. Why? Because the vegetable substitutes not being good conductors, cold contracts the capillaries around the plate, but not beneath it. The blood rushes to the capillaries beneath and forms little lakes of blood. Then follows congestion and absorption; not because overheated under the plate, but because the surroundings are of unequal or uneven temperature. The inequality of temperature beneath and around the plate causes the trouble.

Dr. Atkinson—The closing of the mucus follicles will produce mischief. If the plate is worn during sleeping hours these secretions will be changed to pus. I have seen it all over the roof of the mouth. I knew a dentist who wore celluloid. I looked in his mouth and found it all over aphthous patches, due to the paralyzing of the sensory nerves. He was cured in six months by wearing a metal plate. No plate should be worn all night.

FRIDAY MORNING SESSION.

Dr. A. M. Dudley moved that the chair appoint a committee of seven to consider the feasibility of holding an International Dental Congress in 1887, said committee to correspond with the various dental bodies and leading men in the profession, and report at the next meeting of the Association.

The motion was carried without discussion.

The chair appointed:

Dr. Dudley, Salem, Mass., chairman.

Dr. C. N. Pierce, Philadelphia.

Dr. Frank Abbott, New York.

Dr. M. W. Foster, Baltimore.

Dr. T. W. Brophy, Chicago.

Dr. A. H. Thompson, Topeka.

Dr. Jos. Bauer, New Orleans.

Section VII reported as subjects for investigation during the ensuing year:

Normal and Abnormal Oral Fluids.

The Tongue in Health and in Disease.

The Personal Hygiene of Dentists.

On motion of Dr. Harlan, a vote of thanks was tendered the railroads, steamboats, and hotels, the press of Minneapolis and St. Paul, the Dental Societies of Minnesota and Minneapolis, and the Local Committee.

Thanks were also returned to the Trustees of the Curtiss Commercial College, where the meetings of the Association were held.

After some further announcements relative to the proposed excursions to Lake Minnetonka, the Flouring Mills, and the Yellowstone Park, Dr. E. Parmley Brown read a short paper entitled "Dentistry ; its Past, its Encouraging Present, its Brilliant Future."

He said that Dentistry, once looked upon as almost vulgar by the masses, had been hybridized with truth, impregnated with learning, illuminated by art and stimulated by poetry. That while medicine was almost a pure science, and surgery an artistic science, dentistry was a scientific art ; strictly artistic in the execution of its practice, and scientific in the preparation of the workman for his work. That dentistry was not a part of anything, but a something complete within itself ; closely allied to medicine and surgery, but more operative and more artistic than either. That dentistry, while in no sense a specialty of medicine, yet had its own specialties, as dental surgery, operative dentistry, prosthetic dentistry, anæsthetic dentistry, regulating dentistry, etc.; more than any one brain and body could master in all its details. The carcass of the past is fertilizing the luxurious growth of the present; the future it was not possible to predict. The successful dentist

of the future must be an educated and polished gentleman, in addition to being master of his profession. The lady of the future would select her dentist with ten times more fastidiousness than she will her physician. The dentist must choose wisely between rusting out and wearing out, to make sure of holding out. It was violating the laws of physiology, philosophy and christianity, to labor unceasingly, and it transmits an evil influence to posterity. There is no more wisdom in overwork than in becoming entirely miserable in trying to be happy. The dentist who tries to do without sunlight will be but a sickly plant, a stunted tree. The growth of dentistry had been like the progress of the means of illumination; beginning with the ignition of a pine-knot with the spark from a flint, to the moulded tallow candle, the friction match, and illumination by gas, and finally, the dazzling light of electricity. Comparable to the latter are the microscopic investigations and the ingenious appliances of the dentistry of the present. Ideal dentistry will keep pace with all other things good for man's advancement. An appreciative public, creating a demand for it, will produce it.

The next order of business was the selection of the next place of meeting. The Executive Committee reported that they had received invitations from Louisville, Buffalo, St. Louis, Detroit, New Orleans, Deer Park, Oakland, Niagara, Newport, R. I., Cresson Springs, Pa., Lake George, Asbury Park, N. Y., and other places.

Dr. Atkinson moved that the matter be referred to the Executive Committee, with power to confer with railroads, hotels, etc., and select the place of meeting, the same to be announced through the journals.

The constitution requiring that the place be chosen by ballot, the rules were suspended and the motion carried unanimously.

The next order of business was the election of officers. Of 119 votes cast for President on the first informal ballot, Dr. W. C. Barrett, of Buffalo, having received a majority over all, the ballot was declared formal, and his election made unanimous.

Dr. L. C. Ingersoll, of Keokuk, Iowa, was elected *1st Vice-President*.

Dr. A. T. Smith, of Minneapolis, Minn., *2d Vice-President*.

Dr. Geo. H. Cushing, of Chicago, *Recording Secretary*.

Dr. A. W. Harlan, of Chicago, *Corresponding Secretary*.

Dr. Geo. W. Keely, of Oxford, Ohio, *Treasurer*.

Dr. A. H. Thompson offered the following resolution :

Resolved.—That as an expression of the appreciation of the valuable services of Dr. J. N. Crouse, President of this Association for the closing year, that he be presented with the gavel which he has so effectively wielded, as a souvenir of this successful and enjoyable meeting, and the same be appropriately mounted and inscribed.

Unanimously adopted.

Dr. C. N. Pierce offered an amendment to the constitution, vesting the choice of place of meeting in the executive committee, which lays upon the table for one year.

The Committee on Necrology reported suitable resolutions respecting the death of Dr. Isaiah Forbes, of St. Louis, and of Dr. J. G. Ambler, of New York, which were unanimously adopted.

Dr. A. O. Hunt, from the Section on Dental Education, read a report approving the action of the Association of College Professors with regard to improving the literature of the profession, its text-books, etc. Also their action with reference to equivalent courses in medical colleges, and the diplomas of colleges or high schools.

The report was adopted.

Drs. Geo. L. Field and W. N. Morrison then conducted the President elect to the chair. The retiring President presented him with the battered and broken gavel, and asked for his successor the same kind consideration he himself had received.

Dr. Barrett accepted the office with a few brief but appropriate words. He thanked the Association for the great but unsolicited honor, saying that he would be either more or less than human if he failed to appreciate, tenderly and heartily, the compliment paid him.

The President announced that he would appoint a local committee as soon as the place of meeting should be determined.

The Secretary, Dr. Cushing, Dr. A. W. Harlan, and Dr. E. T. Darby, were appointed a Committee on Publication.

The Association then adjourned *sine die*.

THE EXCURSION.

At 2 P. M., the members, accompanied by a large number of ladies and invited guests, assembled for the last time at Curtiss Hall, and proceeded to the depot of the Minneapolis and St. Louis R. R.,

where a special train of seven coaches was waiting to convey them to Lake Minnetonka. Arriving at the lake they boarded the fine steamer, Belle of Minnetonka, and made the tour of the lovely lake, touching at Excelsior, Hotel St. Louis, and other points. The weather was delightful, the sunset gorgeous, and twilight deepened into darkness ere the Lake Park Hotel was reached, where an elegant dinner awaited them.

Numerous toasts were proposed and responded to, Dr. A. W. Spaulding, of Minneapolis, acting as toast-master. The committee of arrangements had done their duty so perfectly that the occasion was one of unmingled pleasure. The next morning, by special invitation, a large party visited the celebrated flouring mills of Minneapolis. Many visited the lovely Falls of Minnehaha, noted in poetry and song. Others spent the day at St. Paul. On Saturday quite a numerous party left for the Yellowstone Park. The last lingerers turned their faces homeward, and the Twenty-fifth Annual Session of the American Dental Association became a thing of the past, long to be pleasantly remembered.

NEW YORK ODONTOLOGICAL SOCIETY.

REPORTED EXPRESSLY FOR THE INDEPENDENT PRACTITIONER.

A regular meeting of this society was held in the parlors of the Academy of Medicine, Tuesday evening, Jan. 12th, the President, Dr. J. Morgan Howe, in the chair.

Under the heading "Incidents of Office Practice," Dr. Chas. Miller presented casts of a regulating case, showing a decidedly marked improvement under his treatment, also exhibiting the appliance by which the result was obtained. The patient whose teeth the cast represented was a young lady whose inferior incisors projected far outside the superior teeth. The first inferior bicusps were at once removed, and appliances of black vulcanized rubber were made to cover the inferior molars on either side, to which were attached rubber rings, and to these a platinum bar was tied, which bar extended from one ring to the other outside the inferior teeth, thus pressing against the teeth and contracting the arch until the teeth were moved to the desired position.

Dr. W. H. Dwinelle—Among other interesting cases described, referred to a superior central incisor which he treated some fifteen years ago. From a loss of neighboring teeth this incisor has done extra service and been subjected to a severe strain, consequently was badly worn away, nearly to the pulp chamber. Wishing to preserve its vitality and make it useful, he inserted small screws on either side of the pulp for the purpose of obtaining anchorage, and then built out the point with gold. Recently the tooth became devitalized and broke away, so was extracted, but the bright burnished surface of the gold point gave evidence that it had sustained much hard use. The doctor exhibited a superior molar, one of the roots of which had been excised, yet nature had accommodated herself to this condition so that the organ had been retained in the mouth to do good service for years. He also presented an incisor with two roots which, with other teeth in his possession, he found among a lot of bones exhumed from the site of the old New York postoffice, which had been an ancient churchyard.

Dr. F. H. Wardwell—Stated his experience in capping exposed pulps, and related the number of times he had capped and filled, then recapped and refilled; one case in particular in which the stopping of oxy-phosphate of zinc had from time to time worn away, and been repeatedly renewed during a number of years.

Dr. F. Y. Clark—Presented a tooth showing exostosis where there had been an occluding tooth, stating that he believed Dr. Atkinson had offered a "Delmonico dinner" to any one who could show such a condition in a tooth having an articulation.

Dr. W. A. Bronson—Read a short paper, taking for his subject: "Dead Teeth and their Treatment." He stated that there probably was nothing new that he could suggest differing materially from the treatment adopted by many others, but he had been requested by Dr. Woodward to give his usual methods of treating dead teeth, which he did. The paper was freely discussed, and the advisability of drilling through the alveolus to reach the apex of a root was a disputed point at issue.

Dr. Dwinelle—Had, in some cases, drilled through the alveolus, but did not make this his usual practice.

Dr. E. T. Payne—Stated that he performed this operation, and did not consider it a painful one if skillfully and carefully done. He made a small incision in the gum with a lancet, then taking a

small bur, ground on a stone to a spade shape, placed it in the engine and passed it so rapidly and easily through the alveolus that the patient would hardly be aware of it.

Dr. Clark—Thought this method of treatment barbarous. He is able to treat his cases of dead teeth by openings through the nerve canals, believing these openings nature's guide to the seat of trouble.

Dr. W. T. Laroche—Asked Dr. Clark how, in cases where the membrane surrounding the root had become thickened, inflamed, and in a sloughing condition, he could relieve and get rid of the trouble without opening through the alveolus?

Dr. Clark—Replied that if the nerve canals had already been filled and the trouble occurred afterwards, he might possibly resort to the method referred to, for when he filled roots it would be impossible to remove his fillings, but he was careful to treat the root canals and fill temporarily, and allow them to so remain a long time before inserting permanent stoppings.

Dr. Laroche—Stated that he made free openings in these cases, and enlarged the space by means of a cotton tent, then removed the diseased portion of the membrane and scraped the ends of the affected roots. He did not think he had any failures.

Dr. Clark—Asked if the incision healed kindly and closed entirely; to which Dr. Laroche gave an affirmative reply.

President Howe—Intimated that this opening through the alveolus was considered proper surgical treatment in such cases.

Dr. J. W. Clowes—Related an instance where an old gentleman consulted him in regard to a troublesome molar, though he had just been in the hands (as the doctor expressed it) of a "high-toned dentist" who had pronounced his teeth all right. On examination, Dr. Clowes discovered the tooth to be very sensitive, owing to an encroachment upon the pulp from a wearing down of the crown. As the "high-toned dentist" had stated that he could do nothing more to the tooth, Dr. C. concluded to try. He formed a pocket by drilling into the tooth, placing therein a devitalizing paste, and when dead, the nerve was extracted and the canals and cavity filled, thus giving to the patient peace and comfort.

Dr. B. Lord—Read a brief paper on the extraction of teeth, in which he gave it as his opinion that, if possible, the first permanent molars should always be saved, they being in position to do much

of the masticating work. He thought that even where the crowns of these teeth were broken down, it was best to fill the nerve canals and retain the roots in position so long as they gave no trouble, thus preventing the neighboring teeth from falling towards each other, or becoming sensitive at their necks from absorption of the alveolus.

Dr. J. Smith Dodge, Jr.—Remarked that as one gentleman would always extract the first bicuspid to secure space, another would always remove the second bicuspid, and another would always select the sixth-year molars for the sacrifice, there seemed no rule except as each made one for himself. He himself was in the habit of extracting such teeth as ought to come out, and he did not believe that any fixed rule could be carried out, as different patients presented conditions of a different character. In some mouths the molars might all be good and the bicuspid all bad, or vice versa. He was of the opinion that the statement which had been made "that it was the dentist's place to save all the teeth," was wrong, for often by removing certain teeth, even though sound, it would leave the other teeth in the mouth in a much better condition, and they would be longer retained.

Dr. B. F. Howland—Read a short paper on "Tooth Crowns," also described an invention of his own. He presented a specimen to the society for examination, and hoped it might be of benefit to dentistry. He did not wish to disparage the efforts of others who had invented crowns, for many had done excellent work, but many crowns in use had weak points, and he had endeavored to produce something which might overcome such objectionable features.

Dr. Davenport—Spoke highly of the "Howland Crown," he having made use of it in a number of cases. They were simple, exceedingly easy of adjustment, and when in position presented a much more natural appearance, both inside as well as on the surface exposed, than any he had used.

Dr. J. B. Littig, and *Dr. Dwinelle* both commended this crown for the above mentioned good points.

Dr. Dodge—Had very good results in using the old pivot crowns, substituting in place of the wooden dowel a piece of heavy gold wire, roughening the end and first fastening it into the tooth with cement, then when it was set, fastening the other end of wire in the root with cement, the crown then being attached.

AMERICAN ACADEMY OF DENTAL SCIENCE.

The regular monthly meeting of the Academy was held on Jan. 6th, at the residence of Dr. E. H. Smith, Dartmouth St., Boston. After the passage of resolutions of respect to the memory of the late Dr. Riggs, an associate member, the subject of the evening's discussion, "Crowning Teeth," was taken up. Dr. T. H. Chandler, who was to have opened the discussion, was absent. Dr. Merriam exhibited some wire, such as he uses in his own practice in crowning teeth, and stated that he has for some years set all of his crowns with gutta-percha. He thought there were some serious objections to the Richmond Crown, and one is that there are cases which need immediate attention and could not be delayed until a Richmond Crown could be set.

Dr. Clapp—Said that three years ago a patient came to him with a very large bicuspid tooth broken off. The pulp canal had been previously filled with gold, and was of large size. He inserted a crown, securing it with gutta-percha. In a short time the patient came back, and the root had split in twain. He would like to inquire whether there is sufficient expansion taking place in gutta-percha to crack open a tooth.*

Dr. Wilson—Had noticed a tendency in all dead teeth to crack open, and it was, he thought, due to a loss of vitality.

Dr. Smith—Said he uses crowns largely, and sets them with gutta-percha. As the question of bridge-work naturally comes into this discussion, he wanted to say that he is entirely opposed to the practice which too commonly prevails, of sacrificing good natural crowns to make a foundation for setting bridge-work. He exhibited a case of this work done several years ago, where the occlusion of the jaws had been changed by building up the entire palatal surfaces of the superior incisors and cuspids with gold, and then the piece of bridge-work made, and it had done good service for several years.

Dr. Baker—Uses crowns, and often combines with them what is known as the Bing method, but in these cases he always sets the bar with amalgam to prevent subsequent rocking.

Drs. Smith, Hawes, and Baker, were appointed to consider the question of change of date for the annual meeting.

The Society then adjourned.

* See article on Gutta-percha, by Dr. T. T. Moore, in the number for July, 1885, p. 449.

Editorial.

TO JUNIOR DENTISTS. NO. IV.

THE TREATMENT OF DEVITALIZED TEETH.

My Dear Doctor:

If there be one dentist who makes any pretensions to being an operator and who has not a special system of treatment for dead teeth, and his own exclusive method of manipulation for the particular material with which to fill roots, I have not yet made his acquaintance. I confess that I have mine, but you cannot imagine the reluctance with which I attempt to give it in detail. The subject, so old and yet so new, has become hackneyed, and so much of what our English brethren call "rot" has been said and written about it, that it seems impossible for me to give you anything that shall prove either interesting or instructive; and yet, upon the proper and successful treatment of these teeth will, to a very large extent, depend your professional future. Almost any man can save a good tooth, but it takes one possessed of knowledge and skill to save one that is badly diseased. Physicians make or lose their reputation by their treatment of critical cases, and not by the cure of simple colds or inflammations. So a dentist will gain fame, not by the filling of simple cavities or the manufacture of rubber plates, but by restoring to usefulness organs that others have condemned to the forceps. Our calling has arrived to such a pitch of perfection that, extraordinary complications alone excepted, the salvation of any tooth or root is simply a question of relative skill and knowledge.

If your neighbor is competent to successfully treat all classes of diseased teeth save one, and you have the ability to save even those, depend upon it the people will find it out and you will gain a clear lead, even though such a case may not present itself once a quarter. Of course you desire to be the first in your field, and it therefore behooves you to carefully study the difficult cases. You wish to succeed where others declare that success is impossible, but this cannot be hoped for without a clear comprehension of all the conditions, and an intimate knowledge of your materia medica. Specific rules and recipes and formulas will not help you. That is

the quack method of practice. You must be competent to make your own formulas, and to devise your own methods, founded upon a perfect diagnosis of the case. Physicians cannot aid you in the treatment of dental tissue. They are usually the worst of advisers, for their training would lead them to extirpate that which they cannot comprehend, and a medical education teaches nothing concerning the treatment of teeth. Medical men will insist upon the immediate removal of a diseased tooth as a thing that it is hopeless to expect to return to a state of usefulness. Witness the ineffable bosh that has appeared in some medical journals about dead teeth being foreign substance in the jaws. I shall, therefore, write to you chiefly about principles and laws, for when these are comprehended the question of manipulation and materials will readily adjust itself.

Of course you understand the minute structure of the teeth and their surroundings. If you do not you have no right to call yourself a dentist, and should return to your studies at once. In the lectures to which you listened at college, these matters were all made plain to you. But are you sure that you have a *practical* acquaintance with them? Theory is all very well, but do you comprehend what the pathological condition is, and the principles involved in bringing about a return to a true physiological state? Of course I cannot, within the compass of such a letter as this, attempt a full exhibition of the whole theory of practice. I desire rather to set you to thinking, and to induce you to make a practical application of that which you now know.

What is a so-called dead tooth? Is it in truth a foreign substance, as the name would denote, or have we a misnomer in our lexicon? If it be in the same condition with dead bone, then extraction is the only cure. But it is not, for every competent dentist is constantly saving teeth that are called "dead." Many and many of our patients are wearing and subjecting to constant use "dead" teeth. When an organ or tissue is in the true sense of the term dead, the sooner it is removed the better. But teeth that are called dead do not in any way call for extraction.

We commonly speak of a tooth as dead when the pulp is devitalized. But the pulp does not comprise all the life there is in a tooth. You know that the hard portion is composed of three tissues; enamel, dentine, and cementum. The enamel contains compara-

tively little of vitality or circulation. There is scarce any change in it after its eruption, and its nutrition is, relatively speaking, nothing. It is not in contact with any soft tissue, and therefore it may be left out of the consideration of living dental structure. The only portions of the tooth that can exercise a malign influence when the pulp is destroyed are the dentine and the cementum. Of these the dentine only is wholly dependent upon the pulp for nutrition, for the cementum is nourished by the periosteum. The dentine alone can in any sense be properly considered as dead. When the pulp is devitalized, the cementum has still its source of nutriment, while the enamel does not particularly need nourishment. If, then, the investing membrane of a tooth be in a healthy state, the dentine is the only tissue that needs fortification and protection when the pulp dies, and this only from attacks that proceed from the pulp-chamber or nerve canals, for its exterior surface is fully protected by the cementum and enamel which closely invest it in every direction. The dentinal fibrillæ are cut off from their living connections, and must accommodate themselves to new conditions. How shall this be brought about?

Did you ever read Tyndall's "Floating Matter of the Air," or Pasteur's "Researches upon Putrefaction," or Magnin's "Bacteria"? If so, you will have some comprehension of what it is necessary to accomplish in preventing that condition which is called "sepsis." If you have not, let me entreat you at least to make a study of the first of these. I shall not go into a consideration of the bacterian theory. It is sufficient to know that if we can secure and maintain a condition of antisepsis, there will be no decay or putrefaction of animal matter. This may be accomplished in two ways: First, by the use of antiseptics; secondly, and more effectually, by the exclusion of all atmospheric conditions, or communication with the air, which is constantly loaded with the germs of fermentive and putrefactive organism. Of course you have a knowledge of the character and qualities of those remedies which are called "antiseptics," and of that peculiar condition called "septic." I am obliged to presuppose this knowledge, because, even if you are not thoroughly informed of the latest advances of science in this direction, this is no place, nor have I the time or space to enter upon their consideration.

And now for the practical application of some of these principles. When the pulp of a tooth is devitalized (not when the *tooth* is dead)

that tissue is cut off from all nutritive sources and is ready for putrefactive changes as soon as the septic organism may be introduced. It may be that if there is no break in the continuity of the enamel or dentine the pulp will not putrefy, but will become desiccated or dried, and will remain in a peaceful state for an indefinite length of time. But usually putrefaction at once sets in, and the resulting gases being forced through the foraminal opening establish an inflamed and septic condition, which results in alveolar abscess. Remember that this arises from putrefaction of the pulp, or from that of matter which may have become infiltrated into an open pulp-chamber or nerve canal. How is this to be prevented?

If, upon the death of a pulp and before any putrefactive changes shall have taken place, the pulp chamber be carefully opened and all traces of animal matter be removed, of course there would be nothing to putrefy and a septic condition could not be set up. And if the pulp chamber and the nerve-canal or canals could now be hermetically sealed against the intrusion of any foreign matter, this condition could be maintained indefinitely. But, practically, both these results are impossible. We cannot extract all the dead tissue, nor can we hermetically seal under such circumstances. We are obliged to resort to antiseptics to destroy all germs and to put any remaining particles of putrefactive material in such a condition that sepsis cannot occur. We must first get out all the remains of the pulp as far as is possible. To do this, it is absolutely essential that we should have the most direct access to the cavity possible. You cannot remove a pulp through a hole at the side of a tooth. You cannot get it out through a cavity upon the posterior surface of any of the back teeth. In the latter case you must open up the cavity until a broach can be thrust directly down into the nerve canal. You will absolutely require an opening through the coronal surface, and if you are incompetent to get this you must retrace your steps and learn how, before attempting any treatment.

Having secured an opening in the line of the axis of the nerve canals, you may attempt the removal of the pulp. You will greatly facilitate this by placing in the cavity some antiseptic, like carbolic acid, for a day or two, because this will shrink and harden the tissue so that it can probably be extracted whole, instead of piecemeal. In the anterior teeth this getting out the pulp entire will not be difficult, but in bicuspid and molars you will find that, with all

your efforts, you cannot gain an entrance into some of the roots, because of the minuteness of the opening. When that is the case, it is well to give plenty of time to the treatment, after all that it is possible to get out has been removed. Keep the cavity aseptic by means of a pledget of cotton dipped in some antiseptic solution, and carefully sealed up with wax, or gutta-percha, or sandarach, changing it as often as is necessary, and in a few days that tissue which was left will have been sloughed out, and the pulp chamber and canals will be ready for filling.

Remember that all this is applicable only in those cases in which putrefactive changes have not been set up; those which have never been in a particularly septic condition. Of course, in your removal of the pulp you will use such instruments and appliances as best commend themselves to your judgment. Some employ barbed nerve broaches, some a hooked broach, some entangle the pulp in cotton wound on a broach. Use that which you find the most effective in your hands, but keep one thing always in mind: In thrusting a broach of any kind into a nerve canal, there is danger that you may go through an open foramen and wound the delicate tissue beyond the tooth, and yet greater liability to push some of the dead pulp or debris through, and thus have a foreign substance breeding disturbance which you cannot get at.

As to the antiseptic to be used in the treatment of nerve canals, you must use your own judgment founded on a knowledge of the peculiar qualities of each. A solution of Iodoform in Chloric Ether is excellent, (Pulverized Iodoform gr. v, Chloric Ether ℥j). Some prefer carbolic acid and glycerine, equal parts, and this gives very satisfactory results. Others employ Eucalyptus. Try these preparations for yourself, and then you will be able to judge of their merits. But whatever the preparation employed, always remember that it is likely to fail if it be mixed with saliva. Always put on the rubber dam before opening the cavity. Go to work like a professional man. Don't be a slovenly bungler and daub your remedy all over the patient's mouth. You need not expect good results unless you proceed in a workmanlike manner. The rubber dam is essential to a perfect success.

Of the filling of nerve canals I do not propose now to speak. My space is exhausted, and I have not said to you half what I should be glad to say. But I cannot hope to teach you all that you should

know, even were I competent. I can only enlighten you a little concerning principles. Their application you must learn by thoughtful experiment. If, however, you will turn to the number of the INDEPENDENT PRACTITIONER for May, 1884, you will find my views concerning the filling of nerve canals very fully set forth in an editorial article.

Alveolar Abscess is also quite another matter, although many of the principles here laid down are applicable in its consideration. It may possibly form the subject for another letter, provided your patience be not already quite exhausted.

A MUDDLED CRITIC.

Whence comes it that most of the world's great reformers choose for their hobbies matters of which they are most ignorant? The apostles of phoneticism are proverbially bad spellers, and temperance cranks usually the most intemperate of men—in their language. One of our respected exchanges, which, like Hamlet's uncle, is a thing of shreds and patches, and whose contents consist of far too large a percentage of pickings and pilferings, has an editor who seems determined to make innate philological genius serve in place of literary training and scholastic advantages. He is a good soul—a little straight-laced or so—but withal exceedingly captious and critical, and he presents to us less richly endowed mortals model sentences and precise examples in abundance. Here is a specimen of his ability as a linguist, and a good sample of his clear, flowing diction :

“Note your ‘insult to the intelligence of the reader’ in your ‘liberal use of italics,’ in speaking of Dr. Miller’s views as expressed in the last International Medical Congress as given below.”

Oh, shrine of Lindley Murray, once sacred, now profaned! What does all this mean? Reading this, can mortal man forbear the breaking out into exclamations!! *Italics*, or even SMALL CAPS? Is there any intelligence here to insult? *Is* the Medical Congress given below? DOES the insult consist in Dr. Miller’s views, in the International Medical Congress, or in both? WOULD he insinuate that Dr. Miller’s views insult as expressed as given?? But Dr Miller expressed no views in the last International Medical Congress. No views whatever on dental subjects were expressed in the last International Medical Congress, “as given below.” There were no

dental members of the last Congress "as given below," or anywhere else. Dr. Miller never was a member of an International Medical Congress, and could not, therefore, have insulted anyone by his views "as expressed as given below." Certainly we never intimated that Dr. Miller had said, as insulted, as the International Medical Congress had expressed as given below—that is in our view—but in your judgment—therefore—whichsoever—

We give it up. The peculiar style of our esteemed critic is beyond imitation. We will no longer dwell upon the lucidity of this clarified Grant White, this reformer of language, this rectifier of journalistic English. King Lear warns us, "O, that my madness lies; let me shun that." We have been endeavoring to comprehend and respectfully to follow this euphonistic purist, but with Macbeth must we cry, "Hence, horrible shadow! Unreal mockery hence." We will return to our own plain and unaffected style, and leave these higher flights to the remodelers of language, the temperance, tobacco, and great moral reformers, whose mission it is to reconstruct the world.

CRANIOTOMY.

The Catholic Church has promulgated a decision that the destruction of a foetus in parturition or otherwise, even when absolutely necessary to the salvation of the life of the mother, is never justifiable. That is, the physician must allow both mother and infant to die, when one might be saved.

The Jewish Church, according to *The American Israelite*, permits the destruction of the child when it cannot possibly be born without sacrificing the life of the mother.

We really do not see what either one has to do with the matter. It is the province of the physician to judge of this. Metaphysicians should not attempt to meddle with physics. Men who have devoted their lives to abstract speculations are scarcely the ones to be entrusted with the decision of questions that involve life and death.

ANOTHER SPECIFIC.

Dr. Darling, in the *Therapeutic Gazette*, says that half a drachm of muriate of ammonia is the best remedy in neuralgia and toothache. That is quite as definite as to say that quinine is an excellent remedy for illness.

OBITUARY.

DR. S. C. BARNUM.

Died, December 24th, 1885, at Monticello, Sullivan Co., New York, Sanford C. Barnum, D. D. S., in the 47th year of his age.

In Oakland Valley, a lovely spot, amid forest-clad hills and the grandeur of mountain chains, was born the subject of this sketch. He was a graduate of the New York Dental College, and its honors were never more worthily conferred.

Dr. Barnum for many months was a great sufferer from general debility and nervous prostration. His disease was difficult of diagnosis, and involved in mystery, but the rest that comes to all was his at last, and his strifes are ended.

Modest and retiring by nature, he gained the esteem and respect of his profession; skillful and faithful in the field of his labors, the cunning of his hand and the kindness of his heart will long be remembered with admiration and gratitude.

Dr. Barnum entered my office as a student in 1858, and four years later went to practice in the village of Monticello. It was during his stay there that the rubber dam, for drying cavities, was first used by him.

In 1864 he returned to my office as professional assistant, and immediately imparted to me the discovery he had made. At a meeting of the New York Dental Society, in June of that year, he authorized me to present it, a free gift, to the profession. From this resulted a vigorous bound in dental progress, and the name of Barnum became synonymous with bounty and blessing. Dr. Barnum had been the recipient of many substantial and grateful expressions from his contemporaries, when (thirteen years after his beneficent gift) a claim for priority of discovery was set up by another. With health already impaired by a large and exhausting practice, he felt this to be an attack upon his sincerity and well earned fame. It was ill advised and untimely, and sank to the very springs of his life, for its influence he could not control. It is sad and strange that in this benefaction was a peril to him who bestowed it; that through physical weakness and an over sensitive mind, the friend that has left us has won the martyr's crown.

J. W. CLOWES.

DR. S. G. MARTIN.

Dr. S. G. Martin died at Syracuse, N. Y., Dec. 9, 1885, of Bright's Disease, in the 56th year of his age.

Dr. Martin was born in the town of McDonough, Chenango Co., N. Y., April 11, 1830. He began the practice of dentistry in Meadville, Pa. In 1860, he removed to Syracuse, where he practiced successfully for twenty years, when, on account of ill health, he was obliged to abandon the profession. He was at one time a member of the Fifth District Dental Society, and was the first President of that organization.

C. J. PETERS.

DR. ROBERT L. ROBBINS.

While on his way to the Cambridge station on the Fitchburg railroad, on Dec. 29th, Dr. R. L. Robbins, of Boston, dropped upon the sidewalk, dying before assistance could be rendered him. His death was attributed to heart disease. He was about 65 years of age, and had lived in Boston nearly a half a century, having moved there from East Cambridge when a small boy. Dr. Robbins was widely known in the dental profession, and had been the treasurer of the Boston Dental College from its organization. He was much respected by a large circle of patients, friends and neighbors.

A. M. D.

UNIVERSITY OF CALIFORNIA.

The fourth annual commencement exercises of the College of Dentistry of the University of California were held in connection with those of the Medical Department, at the Grand Opera House, San Francisco, Tuesday, November 10th, 1885, at 2 o'clock P. M.

The number of matriculants for the session was thirty-seven.

The degree of Doctor of Dental Surgery was conferred upon the following graduates:

Harry Sylvester Bettis,	Walter Robert Henderson,
George Botsford,	John Adams Douglass Hutton.
Daniel Barratt Cate,	Franklin Pancoast,
Nathaniel Thomas Coulson,	Charles Theodore Rodolph.
George Ihnier Drucker,	Frederick Judson Saxe, A. M.
William Ellis Fitzpatrick,	Joseph Schneider,
	Henry Sylvester, Jr.

ST. LOUIS DENTAL SOCIETY.

At the annual meeting of the St. Louis Dental Society, held Jan. 5th, 1886,

Dr. Wm. N. Conrad, was elected, *President*.

Dr. Geo. A. Bowman, *Vice-President*.

Dr. A. H. Fuller, *Corresponding Secretary*.

Dr. J. L. Foster, *Recording Secretary*.

Dr. H. H. Keith, *Treasurer*.

A. H. FULLER, *Recording Secretary*.

HONORS FOR HERBST.

At the meeting of the Central Verein Deutscher Zahnärzte, held at the city of Nurnberg, August the 3d, 4th and 5th, 1885, Dr. Wm. Herbst, of Bremen, in recognition of the services rendered to the dental profession, was presented with a gold medal.

At the meeting of the Association générale des dentistes de France, and the Societe civile de l'Ecole et de l'hospital dentaires de Paris, held October 20th, 1885, Dr. Wm. Herbst was unanimously elected to honorary membership.

At the meeting of the Societe d'Odontologie de Paris, held in October, 1885, Dr. Wm. Herbst was elected a corresponding member.

MASSACHUSETTS DENTAL SOCIETY.

The twenty-first annual meeting of the Massachusetts Dental Society was held at the hall of the S. S. White Dental Manufacturing Co., No. 160 Tremont St., Boston, on Thursday and Friday, Dec. 10 and 11, the President, Dr. J. F. Adams, of Worcester, in the chair. The annual address was delivered by Dr. D. B. Ingalls, of Clinton, Mass. Dr. W. H. Atkinson, of N. Y., read a paper on the "Relation of Special to General Practice." Dr. David Hunt, of Boston, the eminent oculist, read a paper entitled "An Influence Affecting the Development of the Lower Jaw." Dr. H. C. Merriam, of Salem, Mass., spoke upon "The Preparation of Roots for Filling." Dr. J. N. Farrar, of N. Y., read a paper entitled "Blackboard Illustrations and Chalk Talks."

All of these subjects were discussed by different members of the profession. We expect to publish several of these papers in future issues of the *INDEPENDENT PRACTITIONER*.

The following were elected officers for the ensuing year:

President.—Dr. S. G. Stevens, Lynn.

Vice-Presidents.— { Dr. E. B. Hitchcock, Boston.
 { Dr. H. C. Merriam, Salem.

Secretary.—Dr. W. E. Page, Boston.

Treasurer.—Dr. E. Page, Charlestown.

Librarian and Microscopist.—Dr. R. R. Andrews, Cambridge.

EXECUTIVE COMMITTEE.

Dr. G. F. Eames, Boston.

Dr. E. C. Leach, Boston.

Dr. J. G. W. Werner, Boston.

Dr. F. A. Cooke, Boston.

Dr. J. K. Knight, Hyde Park.

Dr. R. R. Andrews, Cambridge.

ILLINOIS STATE DENTAL SOCIETY.

The Executive Committee of The Illinois State Dental Society announces the following list of reports and essays for the next annual meeting, which will be held at Rock Island, the second Tuesday in May.

1.—Report of the Committee on Dental Science and Literature,—

Dr. HOMER JUDD, of Alton, (Chairman).

2.—Report of the Committee on Dental Art and Mechanism,—

Dr. J. FRANK MARRINER, of Ottawa, (Chairman).

3.—Essay, Dr. JOHN S. MARSHALL, of Chicago,—“Oral Surgery.”

4.—Essay, Dr. C. R. TAYLOR, of Streator,—

“Preparation of Pulp Canals and Cavities for Filling.”

5.—Essay, Dr. HOMER JUDD, of Alton,—

“The Retention of Pulpless Teeth in the Jaws.”

6.—Essay, Dr. J. D. MOODY, of Mendota,—“Post Graduate Study.”

7.—Essay, Dr. J. G. REID, of Chicago,—“Oral Chemistry.”

8.—Essay, Dr. E. S. TALBOT, of Chicago,—

“Separating Teeth Preparatory to Filling Them.”

It is probable that Dr. G. V. BLACK, of Jacksonville, may have an essay, the subject of which he is not yet ready to announce.

EDMOND NOYES,

E. J. GREEN,

W. H. TAGGART,

Executive Committee.

MARRIED.

In New York, January 21st, 1886, at the residence of the bride's father, Meyer L. Rhein, M. D., D. D. S., to Lizzie Esse, daughter of Dr. F. M. Odell. The many friends of the contracting parties wish them all happiness, and that their married life may be long and prosperous.

THE LOUISVILLE MEDICAL NEWS and *The American Practitioner* are to be consolidated under the name of *The American Practitioner and News*. The new journal will be published bi-weekly, and it will be edited by D. W. Yandell, M. D., of *The Practitioner*, and H. A. Cottell, M. D., of *The Medical News*.

If we are to have all the virtues of both these excellent journals condensed into one, it will make a model indeed. It looks like it, when Drs. Yandell and Cottell become the editors, for both are men of undoubted literary ability, and both are possessed of wide experience and thorough training. The new journal will be published at \$3.00 per year. Address John P. Morton & Co., Louisville, Ky.

THE LATEST DEVICE in office thieving is founded upon the habit which ladies have of carrying their purse in a cloak pocket or bag. A well dressed rascal waits until he sees such an one enter an office when he is certain that no other patients are present. He then enters and requests that some trifling operation be performed. But he is in no hurry; he will wait till the dentist is at liberty. In the meantime he watches for his opportunity, ransacks the cloak pockets or reticule of the patient in the chair, and slips out, either silently or under some pretense. Look out for him. The offices of a number of dentists in Buffalo have been thus robbed.

DR. R. I. PEARSON, of Kansas City, has purchased the Kansas City Dental Depot, and will henceforth be the head of the house of R. I. Pearson & Co. Dr. Pearson is very widely and as favorably known to the dentists of the south-west, and they now have the opportunity to manifest their high regard for him in a substantial manner. His interest in dentistry has always been exceedingly active, and he has been the earnest supporter of dental societies and meetings. He was formerly the very efficient editor-in-chief of *The Missouri Dental Journal*. His eastern friends wish him the most abundant success.

THE RETIREMENT OF OAKLEY COLES from dental practice is to be signalized by the presentation of a testimonial. A committee to raise the necessary funds and to arrange the affair has been appointed, of which Sir Edwin Saunders is chairman, and Mr. Charles Varey is treasurer.

DR. E. M. NELSON, of Lowell, Mass., has been arrested for complicity in the robbing of the Lancaster National Bank, of Mass., by its president, Mr. Wm. H. McNeil. Dr. Nelson formerly enjoyed a large practice, but becoming interested in various speculations he had neglected his business, and finally retired from practice altogether. He was interested in the West Rutland Marble Company, whose doings lately absorbed so much of public attention, and whose losses, it is charged, were made good by peculations from the Lancaster bank.

DR. C. EDMUND KELLS, JR., advises that when an artificial nose is fashioned of hard rubber, the edges which come in contact with the tissue of the face should be made of soft velum rubber. If the hard rubber be in contact during the muscular movements of talking or smiling, a clear line of demarcation between the movable tissue and the immovable nose will be seen. But when the velum rubber is used at the edge, the motions are lost in it and the line is not observable.

AN APPRECIATIVE FRIEND, who is imbued with the proper spirit, writes as follows: "I have an article for the INDEPENDENT PRACTITIONER which I will forward at an early date, with the complete understanding that you shall change, criticise, transpose, cut down or reject altogether, as in your judgment may seem best; in other words, you shall carry out Dr. Cushings' idea of the editorial privilege and duty to its fullest extent, for I am satisfied that he is correct."

PASTEUR is now constantly receiving hydrophobic patients from all over the world. A number have gone to him from the United States. The process consists essentially in inoculation with the attenuated virus of rabies, which has been reduced in potency by being passed through a number of organisms. If the period of incubation of the disease has not passed, this is supposed to be as perfect protection as is vaccination for small-pox,

CONDITIONS which are in nowise connected with the reception and absorption of lime salts, such as bad hygiene of dwellings, syphilis, etc., favor the development of rachitis in a most remarkable degree. The deficiency of lime in rachitic bones is called forth, singly and alone, by local inflammatory process. But the local process in the bones in turn has its origin in some preceding anomalous condition of the entire organism.—*Phil. Med. Times.*

THE POLYCLINIC gives a test for determining the character of the discharge from a suspected salivary fistula. It consists in bringing a drop of the fluid into contact with a drop of the tincture of chloride of iron on a white surface, like a sheet of paper, when if the discharge contains saliva it will give a pink color, thus indicating the presence of the sulpho-cyanide of potassium, an ingredient of normal saliva.

THE MEDICAL RECORD gives an account of a case in which the two lower central incisors were found perfectly erupted at birth. Since that time the other incisors have made their appearance, but are smaller than the first ones.

A SINGULAR ACCIDENT occurred in the practice of J. J. H. Sanders, of Barnstaple, England. In attempting to remove a superior bicuspid tooth, the palatine blade of the forceps broke and went down the trachea. Suffocation at the time was avoided by inversion, but secondary trouble manifested itself some time after, and the foreign body was finally removed by tracheotomy.

THE FRENCH have a saying that is not very complimentary to our profession, but which doubtless had its origin in the time of the notorious traveling charlatans who made such extravagant pretensions—*Il est menteur comme un arracheur de dents*. He is as great a liar as a dentist; he has infinite conceit in his own professional skill.

ANÆSTHETICS caused the death of eighteen persons in England and Scotland last year. Nine were from the use of chloroform, six from ether, and three from a mixture of ether and chloroform. In every fatal case the patient had been comparatively healthy, and the operation was of a slight character.—*Caulk's Dental Annual*.

THE QUARTERLY COMPENDIUM says that while fossil human teeth contain large quantities of fluorine, the teeth of to-day show but very little in their composition.—Is this assertion founded upon any reliable analysis, or is it merely conjectural? It should not be received until positively proved. Who knows anything about it?

THE COURSE OF STUDY for a graduate in medicine in Belgium extends through seven years; in Russia, five years; in Denmark, seven years; in France, four years; in Italy, six years; in Germany and Austria, about four years, but the graduate must have a certificate of graduation from a public gymnasium or high school.

DR. A. W. HARLAN, of Chicago, sailed for Liverpool on the 7th ult., for a brief visit to London, Paris, and Berlin. Insomnia had claimed him for a victim, and an ocean voyage was recommended. His many friends will earnestly hope that the trip may be beneficial. He will return the last of the present month.

WE WONDER if many of our readers have tried the small brushes that are adapted to the dental engine? They render good service in polishing stains from the teeth, and cost so little that there can be no excuse for using them a second time. They should be charged with powdered Arkansas stone moistened with glycerine.

C. E. F.

MURIATE OF COCAINE, if we can believe the assertion of observers, is the most seductive and dangerous drug which has ever been abused by man. The Cocaine habit, when once established, is far more debasing and destructive than is that of Opium or Alcohol.

COCAINE is a Methylbenzomethoxyethyltetrahydropyridinecarboxylate. Why is it not called by its proper name?

THE MEDICAL ANALECTIC, that excellent journal published by G. P. Putnam's Sons, will in future be under the editorial management of Dr. B.W. Amidon. New and more complete arrangements have been made for the reception of foreign journals, from which abstracts and translations will be made.

THE BUFFALO CREMATORY has been completed and the first body incinerated. The test was very successful indeed, the whole process occupying only about an hour, and the results even better than could have been anticipated. The building is a beautiful one, and all the accessories are in keeping.

A VERY FEW of our exchanges come to us rolled up so closely that it is very difficult to get them open without tearing. A publisher who has no more respect for his journal than to roll it up like a bandage, does not deserve to have it read or respected by any one else.

M. DUCHESNE, a French advertising dentist, has lately been condemned by the civil courts to pay a fine of 600 francs, and 3000 francs damages to the family of a patient who died under the administration of nitrous oxide given at his hands.

ERRORS WILL appear in the most carefully prepared reports. The remarks ascribed to Dr. Harlan, on page 28 of the January number, were really made by Dr. Marshall. "Dr. Davidson," on the same page, should read, Dr. Davis.

JOHN C. DRAPER, M. D., L. L. D., Professor of Chemistry in the Medical Department of the University of the City of New York, died in that city after a brief illness, on the 20th of December last.

DR. E. PARMLY BROWN is always presenting something new. His latest is a polishing point for the dental engine, made of Moose hide, and intended to carry polishing powder. It is very effectual.

PROF. VIRCHOW says that "no specialty can really flourish which cuts itself entirely off from the great body of the science." How is it when the science cuts itself off from the specialty?

THE MEDICAL SOCIETY OF THE STATE OF NEW YORK will hold its eightieth annual meeting in the Common Council Chamber at Albany, Feb. 2, 3, and 4, 1886.

THE DETROIT LANCET will henceforth be known as *The American Lancet*. It will be quite as readable and instructive under the new name, and that is saying a great deal.

PROF. R. OGDEN DOREMUS reports to the New York Medico-Legal Society a case of death from the application of Cocaine to relieve the pain from a decayed tooth.

"PREVENTIVE MEDICINE."

PROPHYLACTIC, ANTISEPTIC, DISINFECTANT,
LISTERINE
NON-TOXIC, NON-IRRITANT, NON-ESCHAROTIC.

These properties added to the absolute safety of Listerine, its agreeable character and uniform strength, concentrates into this preparation every requisite of a perfect Prophylactic, and gives it undoubted superiority over all other Antiseptics, especially for internal use. The well-known therapy of the several ingredients of Listerine confirms its claims for more than merely mechanical germicidal properties.

Formula.—*LISTERINE* is the *essential Antiseptic* constituent of Thyme, Eucalyptus, Baptisia Gaultheria and Mentha Arvensis in combination. Each *fluid drachm* also contains *two grains of refined and purified Benzo-Boracic Acid*.

Dose.—One teaspoonful *three or more times a day* (as indicated). As a local application to ulcers, wounds and abscesses, or as a gargle, mouth-wash, inhalant or injection, it can be used *ad libitum*, diluted as desired.

The universal commendation of *LISTERINE* by Physicians and Scientists of all Schools throughout the United States, after five years' thorough Clinical Experience, has fully established its value in **PHTHISIS, DYSPEPSIA, DIPHTHERIA, CATARRH, DYSENTERY, SCARLATINA, SMALL-POX, ERYSIPELAS, TYPHOID** and other **FEVERS**; and as the most grateful and pleasant disinfectant and prophylactic for **VAGINAL INJECTIONS** in **OBSTETRICAL, LEUCORRHOEA, GONORRHOEA**, and, notably, for the hands, after Surgical and Gynæcological Operations.

This accumulated evidence of merit indicates its special adaptability to ;

DENTAL PRACTICE.

The testimony of its value in the treatment of ORAL DISEASES, in Dental Practice, is set forth in a special pamphlet on that subject to be obtained gratis on application, together with many Valuable Clinical Notes and Reprints by Eminent Surgical, Medical and Dental Authors.

☞ Three Reprinted Lectures on **CHRONIC NASAL CATARRH**, (illustrated by forty wood cuts,) by Prof. **GEORGE M. LEFFERTS, M. D.**, New York City, are now ready for delivery, free of cost, to those who mention this Journal in making application.

LAMBERT PHARMACAL CO.,

New Office and Laboratory. - 116 Olive Street, ST. LOUIS.

HARDMAN'S WHITE ALLOY

Takes the place of gold for filling front, or any teeth.

PRICE, \$3.00 PER OZ.

Test for Color—Place a button of Amalgam, that has one surface polished, into a solution of 40 to 60 grs. of sulphuret of Potassa in 1 oz. of water. Let remain 24 to 48 hours.

Test for Leakage—Fill a small glass test tube with it, just as you would a cavity in a tooth, and drop it into a bottle containing an alcoholic solution of red aniline.

This Alloy Stands These, and Any Other Tests Deemed Requisite to Perfection.

HARDMAN'S SUPERIOR AMALGAM

Surpasses all others for strength and density of texture. Use it for Crown Work, in Molars, &c.

PRICE REDUCED TO \$4.00 PER OZ.

Large discounts on both of these in quantities.

MADE AND FOR SALE BY

J. HARDMAN, MUSCATINE, IOWA.

If your depot does not keep them send to the proprietor for them.

6-4-AN- $\frac{1}{4}$

DIBBLE'S WHITE AMALGAM

A Gold Alloy. \$5.00 per ounce.

Manufactured only by

W. H. DIBBLE, MIDDLETOWN, CT.

For sale by S. S. WHITE DENTAL M'FG CO., or sent by mail by the manufacturer.

ALSO MANUFACTURER OF THE DIBBLE PLUGGER.]

THE FOLLOWING TESTIMONIALS ARE RESPECTFULLY OFFERED.

Dibble at present is ahead on Amalgam.
NEW YORK, Jan. 9, 1883.

J. W. CLOWES, 667 Fifth Avenue.

I believe it to be the best article of the kind in use.

W. H. DWINELLE, M. D., 27 West 34th St., New York.

I take pleasure in recommending it as the best now known.

GEORGE H. PERINE, 74 West 50th St., New York.

Have used it three years, and it has given me better results than any other.

O. E. HILL, M. D. S., 160 Clinton St., Brooklyn, N. Y.

I am satisfied it is the best in use. I can recommend it to the profession.

C. E. GRAVES, 393 Jay Street, Brooklyn, N. Y.

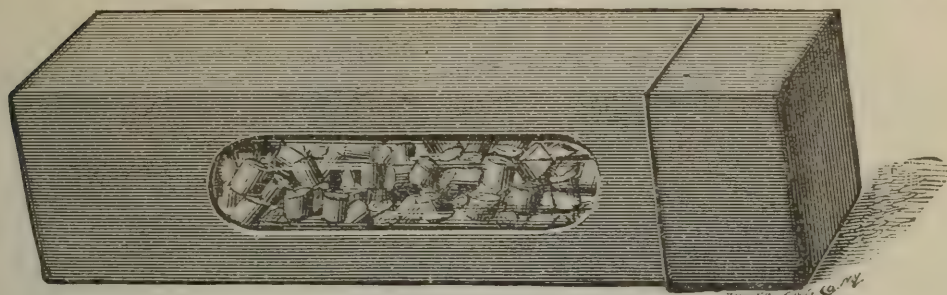
It is the best I have ever used.

MILES H. DODGE, 20 E. 33d St., New York.

\$5.00 per oz. or 3 oz. for \$12.50. Sent by Mail.

3-5-AN- $\frac{1}{2}$.

EXTRA PLIABLE DECIMAL GOLD ROLLS.



(This Engraving represents a Phial of size 1 of the above designated Gold, inclosed in a Box.)

Gold Foil and Gold Rolls, per 1-10 ounce,	-	-	\$3 00.	Per ounce,	\$28.00
Extra Pliable Decimal Gold Rolls, per 1-10 ounce,	-	-	3.50.	Per ½ ounce,	17.00
Untrimmed Foil, per 1-5 ounce book,	-	-	-	-	5.50
Ideal Cement, per package, with Pigments,	-	-	-	-	1.00
Rowan's Ideal Alloy, No. 1, 1er 1 oz. \$5.00, 2 ozs. \$9.00, 4 ozs.	-	-	-	-	16.00
Rowan's Ideal Alloy, No. 2, per 1 oz. \$3.00, 2 ozs. \$5.50, 4 ozs.,	-	-	-	-	10.00
Tin Foil (our make), very tough, per book,	-	-	-	-	.50

Try some of our "Ideal" Cement Filling and "Ideal" Alloy.

Appended are testimonials for our preparations of Gold from well-known gentlemen:

I have used the Rolled Gold of Edward Rowan & Co., and like it very much. I prefer high numbers—30, 6.) and 120—for facility of adaptation to walls of cavities, capacity to bear high annealing and making solid work, I know no superior make.

October 23, 1882.

W. H. ATKINSON,
41 E. 9th Street, N. Y.

271 N. Eutaw Street.

BALTIMORE, Md, June 5th. 1883.

GENTLEMEN—I have used nearly all of the last ounce of your "Extra Cohesive" Decimal Gold Foil No. 4, and it affords me pleasure to inform you that it has proved to be a first-class article in every respect. It is cohesive and tough in the highest degree, yet possessing less harshness than is usually found in cohesive foils. I cheerfully thus refer to it, and so long as you continue to make such foil, I want nothing better.

Very respectfully,
JAS. H. HARRIS, M. D., D. D. S.

No. 100 Boylston Street.

BOSTON, MASS., June 30, 1883.

Sirs—I have used your Rolled Gold for several years. When I wish to use cohesive gold, I prefer your No. 30 Rolled to any gold with which I am familiar. It is very tough, soft and cohesive. In short, pleasant and easy to work, and makes a compact, even and finished filling.

Yours truly,
L. D. SHEPARD.
Late Professor of Operative Dentistry, Harvard University.

S. H. GUILFORD, A.M., D.D.S., (Professor of Operative and Prosthetic Dentistry, Phila. Dental College,) has permitted us to state that he uses and recommends our "Gold Rolls."

DR. H. J. McKELLOPS, of St. Louis, writes us, under date September 16, 1884, "You may use my name in connection with your Gold with pleasure."

H. C. REGISTER, M. D., D. D. S., of Philadelphia, writes us, "You are permitted to use my name in recommending your Gold, as second to none in the world!"

CHAS. L. STEEL, M. D., D. D. S., of Richmond, Va. (Demonstrator Operative Dentistry, University of Maryland). DEAR SIR—Your last ounce of Gold duly received, and, as usual, works superbly. I have used many makes of Cohesive Foil, but for some time past have confined myself to yours exclusively, as I find none other so near perfection.

A. H. FULLER, M. D., D. D. S. (Professor of Operative Dentistry, Missouri Dental College) Should you so desire you may state that I have been using your Gold for the past year or more, and find it first-class in every respect. Shall send you an order in a few days for more.

WM. CARR, M. D., 35 West 46th Street, New York, permits us to state that he endorses our Golds. He uses Nos. 3 and 4 soft; No. 60 Rolled; and Gold Rolls.

EDWARD ROWAN & CO.

196 Third Ave., NEW YORK.

COGSWELL'S Disk Carrier and Guard

MADE BY
CODMAN & SHURTLEFF,

167 Tremont Street,

BOSTON, MASS.

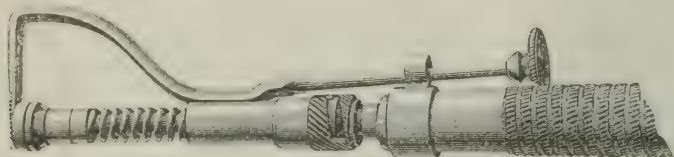


Fig. 214.

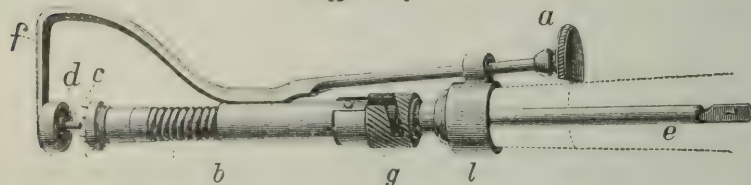


Fig. 214 A.

Patented Feb. 10, 1885.

This invention will be found indispensable by every dentist who values time, as it will enable him to attach the much used Disk to the Engine Mandrel in a small fraction of the time required by other methods.

It is represented in the figures as connected to the Hand-piece. In Figure 214 the holding device is represented as closed, the outline of Disk being indicated by circle of broken lines. In Figure 214 A, it is shown as opened by slight pressure of the thumb or finger against the knob *a*, ready to receive the disk. Upon relaxing this pressure the spring *b* closes upon the disk, which is centered upon *d*, perforated by four hardened steel points, *cc*, and thus securely held ready for rotation. The carrier is attached to the Hand-piece by insertion of the Mandrel *e*. A friction ferule *l* overcomes slight tendency of bracket *f* to rotate, and enables the operator to retain the guard opposite that portion of the disk where it will most effectually guard cheek, tongue, or other part from injury, or, prevent interference with rubber dam. At *g* is a locking sleeve, employed only when in the use of stiff disks there is a tendency to overcome pressure of spring *b*, and permit loosening of disk.

The Carrier will receive disks of $\frac{3}{8}$ inch diameter down to $\frac{3}{16}$ or even smaller. It may be rotated in either direction without loosening the disk, as occurs with the ordinary screw-held disk.

PRICE, \$2.50.

We are prepared to supply the Disk Carrier and Guard to fit the S. S. W. Hand-pieces, Nos. 5 and 6, Hodge's and Bonwill's Improved, at this price. Other Hand-pieces, if sent us, will be fitted to order at the same price, or at a moderate additional charge. *In ordering, state what Hand-piece is used.*

MESSRS. CODMAN & SHURTLEFF:

BOSTON.

Gentlemen,—The new Disk Carrier, with guard, which I have fully tested, is very satisfactory in all respects. I prefer it to any other pattern now in the market.

ISAAC J. WETHERBEE, D. D. S., Pres. B. D. C.

From J. B. Coolidge, M. D., D. D. S., Professor of Clinical Dentistry, in Boston Dental College.

MESSRS. CODMAN & SHURTLEFF:—

The new Disk Carrier which you sent me is the best. It will very soon save its cost in the time required for changing the disk. The guard will be found of great use in protecting the cheek, tongue, and rubber dam from the action of the disk. I would recommend it to every Dentist.

J. B. COOLIDGE.

From J. A. Watling, D. D. S., Professor of Operative Dentistry, Michigan University.

MESSRS. CODMAN & SHURTLEFF,

167 Tremont Street, Boston, Mass.:

Dear Sirs,—Your Disk Carrier received. After several careful trials, I feel justified in recommending it to the profession as a very useful and valuable addition to a dentist's outfit.

It is one of the best that I ever used. Is readily applied to the engine, and to replace the old disk with a new one requires but a few seconds.

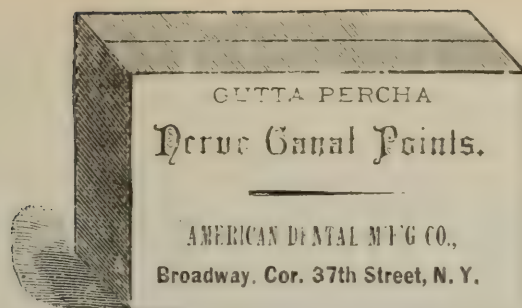
The protector, while holding the disk firmly in place and being all that is necessary for the prevention of injury to the mouth, does not shut off the view of the filling to be finished.

It is indeed an instrument to be desired by all careful practitioners.

1-6-an-1

Respectfully,

J. A. WATLING, D. D. S.

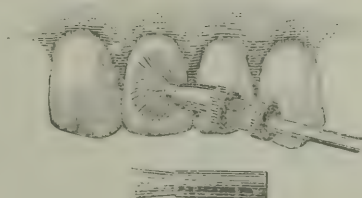


To those that have never seen or used the little Gutta-Percha Nerve Canal Points, manufactured by us for the past year and a half, we would say, that they have been well received, and extensively used by the profession generally. They are very carefully made and nicely tapered, being well adapted for the purpose for which they are intended.

The quality of Gutta-Percha from which they are made is the very best, being good and tough, permits bending in any shape, and easily worked.

PRICE PER PACKAGE OF 125 POINTS, 50 Cents.

SMALL POLISHING BRUSH.



The brush will be found very useful in cleaning teeth and finishing fillings; also in polishing the walls of cavities in preparing them for filling.

The brushes are made in three grades—soft, medium, and stiff—and adapted for use with either the Klump Port Polisher or the R. A. Port Polisher.

Price Per Dozen, - - - - - 50 Cents.

Price for R. A. Port Polisher, - - 30 Cents.

AMERICAN DENTAL MANUFACTURING COMPANY,
BROADWAY, Cor. 37th STREET,

The Prophylactic Tooth Brushes

ADULTS' AND CHILD'S SIZES.

The only Tooth Brush made that has received the unqualified endorsement of the Dental Profession.

Used as directed, it is a "preventive of disease."

Each brush in a box with full directions for use.

Made in hard, medium and soft; and when desired, extra soft.

Every Brush Warranted.

Circulars, Price, Etc., Sent on Application.

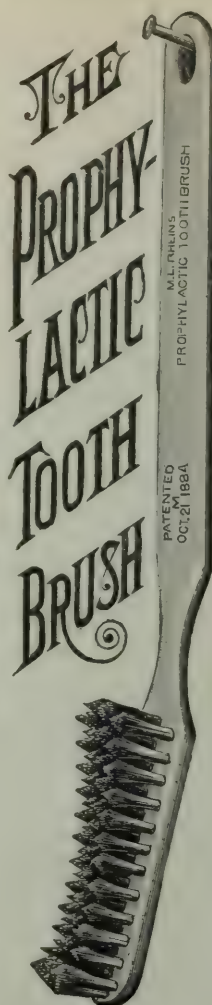
Any Dentist who has not tried this or our Dental Plate Brush, can procure a sample at the dozen price by addressing the

FLORENCE MANUFACTURING CO.,

FLORENCE, Mass.

23-25 Greene St., NEW YORK.

185-187 Dearborn St., CHICAGO, ILL.



HAS IT BEEN TRIED?



NEW ORLEANS, LA.,
AUG. 5, 1885.

I HAVE USED THE BRUSHES, BOTH THE SOFT TOOTH BRUSH AND THE PLATE BRUSH, MANUFACTURED BY THE FLORENCE MANUFACTURING COMPANY, AND THINK THAT HENCEFORTH THEY WILL PROVE A *SOME QUA NON* TO ALL WHO KNOW THEIR VALUE.

THE PROPHYLACTIC TOOTH BRUSH IS CERTAINLY A LONG STEP IN ADVANCE OF ANYTHING PRODUCED HERETOFORE, WHILE THE DENTAL PLATE BRUSH FILLS A LONG FELT WANT.

J. R. WALKER, D.D.S.

SEPT. 24, 1885.

TWO MONTHS' CONSTANT USE OF ONE OF YOUR PROPHYLACTIC BRUSHES BY MYSELF, AND OF YOUR PLATE BRUSH BY MY WIFE, CONFIRMS US IN THE OPINION THAT THEY ARE EMPHATICALLY THE VERY BEST BRUSHES EVER PUT ON THE MARKET.

J. R. WALKER, D.D.S.

WAS IT SATISFACTORY?

Send for Circulars and Testimonials.

FLORENCE MANUFACTURING CO.,
FLORENCE, MASS.

REFERENCES FURNISHED ON REQUEST.

C. A. TIMME & CO. Importers of

CASH MUST ACCOMPANY THE ORDER.

ORDER BY HOBOKEN N.J.

COHESIVE, SOFT No

WOLFRAB'S **CHEMICALLY**
PURE

GOLD-FOIL.

C.A. TIMME & CO.

IMPORTERS of DENTISTS
SPECIALTIES

SOLE AGENTS FOR THE U.S.
190 HUDSON ST. HOBOKEN N.J.

Foil, \$4.00 per $\frac{1}{8}$ oz., \$15.00 per $\frac{1}{2}$ oz., \$30.00 per 1 oz.

On orders of two ounces and more at a time a reduction of 50 cents per ounce will be given.

This gold is made in reference to the HERBST method of filling teeth with the engine. It has also proven a very desirable article for the *mallet* and *hand-pressure*.

We claim it to be superior to any other make for its peculiar *softness*. It easily adapts itself to the walls of the cavity, and when properly manipulated it makes a *solid* and *cohesive* filling. If it is to be used cohesively, a slight *warming over* the flame will have the desired result.

Very good reports have been received from prominent practitioners.

Timme's Imported German Phosphate Cement, per box, \$1.00.

T H E

Independent Practitioner.

VOL. VII.

MARCH, 1886.

No. 3.

Original Communications.

ON CERTAIN FERMENTATIVE PROCESSES IN THE ALIMENTARY
CANAL AND THE MICRO-ORGANISMS BY WHICH THEY ARE
PRODUCED.

BY PROF. DR. MILLER, BERLIN.

(Continued from the February number.)

Some further questions of interest in this connection are the following: At what stage in the process of digestion, or at what percentage of acid in the contents of the stomach does fermentation cease? How much of a given antiseptic—hydrochloric acid, salicylic acid, etc., must be given in order to bring about a cessation of an abnormal fermentation in the stomach? I attempted to effect a solution of this question through the following experiments:

I chewed up a portion of meat and bread and added a small quantity of sugar with sufficient milk to make a thick paste. I then infected this mixture richly with three kinds of stomach fungi which are characterized by the large quantities of gas that they produce, and added to it an equal quantity of four per cent. peptone-sugar-gelatine. After it had stood for an hour in the incubator, it was divided into a number of portions of 20 cc. each. To each of these portions I added hydrochloric acid in increasing quantities, so that the first received four parts of H. cl. to 10,000, and the last two to 1,000. After this they were poured into test tubes, and the level of the mixture in each tube accurately marked. The portions being kept at 20° C. soon solidified, and after eight to twelve hours, in all the tubes where fermentation took place an elevation of the surface of the gelatine was observed, due to the

formation of bubbles of gas, and in those tubes containing the smallest quantity of H. cl. the mixture was in part driven quite out of the tube. I found that not till the proportion of H. cl. reached 1.6 to 1,000 did the surface of the mixture remain at a constant level, or in other words, did the fermentation cease. Salicylic acid effected the same in the proportion of 0.4 to 1,000. If, therefore, in a food mixture we wish to prevent fermentation, or to arrest it when once begun, we must add 1.6 grams H. cl., or 0.4 grams salicylic acid to each 1,000 grams of the mixture.

In the human stomach, however, we have to deal, not with a total lack of H. cl., but rather with a diminution in the quantity of the same, so that we require only to supplement the acid already present. When digestion is at its most active stage, the normal proportion of H. cl. in the stomach, at which all fermentations under normal conditions disappear, is 2 to 1,000, and since fermentation does not take place till the proportion of H. cl. has been reduced to 1.6 to 1,000, we must, in cases of continued fermentation in the stomach, expect a lack of H. cl. equal to at least 0.4 grams per liter of stomach contents, and this quantity must be administered in order to restore the normal condition.

According to the determinations of Bidder and Schmidt, ten to twenty liters of gastric juice are secreted daily. If we consider this estimate as two to four times too high, and take five liters as the real quantity, then we have still ten grams H. cl. (forty grams H. cl. solution of sp. gr. 1,1233) which are daily poured into the human stomach. Under such circumstances we can hardly expect to produce much impression by the three to ten drop-doses recommended in text-books. The quantity of any given antiseptic which is necessary to suspend fermentation in the human stomach depends upon the intensity of the fermentation and the quantity of the stomach contents; in any case we must calculate upon considerable and repeated doses of H. cl. if we wish to produce a marked impression. In case of the ordinary lactic-acid fermentation, outside of the stomach the process will, in a few hours, be retarded by the antiseptic action of the acid which is produced. In the stomach this action loses its signification, from the fact that the acid produced is speedily absorbed, and the contents of the stomach are a number of times daily replaced by neutral material. These experiments also show how small a change in the quantity or quality of

the gastric juice is necessary to render a permanent fermentation (*dyspepsia chronica*) in the human stomach possible.

The objection may be urged against these experiments that, in the solidified condition of the mixture, the H. cl. could not have its full effect. The control experiments, however, made at the temperature of the human body (at which the mixture of course became liquid), confirmed the accuracy of the previous results. It may be further said that a portion of the H. cl. disappeared in combination with bases in the mixture, but I am satisfied from experiments not here described, that the loss from this source must have been very small, and was replaced by the acid present in the mixture at the beginning of the experiment, the reaction in each case being clearly acid.

I next attempted to determine the action of these fungi on carbohydrates, particularly their acid-producing power, being anxious to find the source of the acids of the human mouth. For this purpose I cultivated them in beef-extract-sugar solutions, in peptone-sugar solutions and in milk. Sixteen of the mouth fungi produced an acid reaction, four an alkaline, and five gave inconstant results. The corresponding numbers for the stomach fungi were nine, two and two; for the fungi of the intestines, six, five and three. The proportion of the acid-forming fungi in the mouth and stomach is, according to these results, much greater than in the intestines. Whether this condition is constant or not, could be determined only by a large number of series of experiments. The cultures in sterilized milk gave results slightly different from the above. It was, furthermore, not possible to draw a sharp line between those fungi which produced an acid, and those which produced an alkaline reaction, since in some cases the reaction was only slight and changed with time, while in other cases it was altered by a change in the amount of sugar present. One bacillus, which I tested in reference to this question, cultivated in three per cent. beef-extract solution, left the reaction neutral when one-tenth per cent. sugar was present; if the amount of sugar was increased, the reaction became acid; if it was diminished, the reaction became alkaline.

It is equally difficult, I think, to draw a sharp line between putrefactive or fermentative organisms, since many ferment organisms are capable of decomposing albuminous substances with development of putrefactive products, while on the other hand many organ-

isms which pass as putrefactive, when brought into saccharine solutions give rise to fermentation without the production of a trace of the characteristic products of putrefaction. One of the mouth-fungi which I examined in reference to this question, readily dissolved coagulated albumen with development of bad smelling gases, among which SH_2 (Sulphuretted hydrogen) and NH_3 (Ammonia) could be easily detected. It also showed an inverting action, in that it converted cane sugar into Dextrose and Levulose. In the third place it split fermentable sugars into lactic acid, with production of CO_2 (Carbon dioxide) In the fourth place it gave rise to an acid reaction in a solution of starch, while at the same time the solution acquired the capacity of reducing the oxide of copper; in other words, this fungus showed also a diastatic action.

In these different fermentations there undoubtedly arise in the later stages various secondary products, so that the changes which may be brought about by this one fungus, and the products developed under its action, make up a very large number. This result affords an explanation of the fact that in an open decomposing substance so many different products may appear, and renders very doubtful the supposition that, for every new product in the process of decomposition, a new organism must be present. The twenty to thirty different compounds which may be produced in an open decomposing solution, are in all probability not produced by one fungus alone. It is, however, not in accordance with the facts to assume that for every product, or indeed for every stage in the process, a new fungus must be introduced.

On account of the large number of the fungi under consideration, it was not possible to undertake a determination of the acid in each case. Formerly it was believed that there was a certain specific organism, which alone could give rise to lactic acid fermentation. In 1883, however, I showed that there were a number of fungi in the human mouth which possess the capacity of forming lactic acid from sugar, and to-day it is perfectly well established that this action, as well as the inverting or peptonizing, is very widespread among the Schizomycetes. This fact furnishes an easy explanation of the constant appearance of lactic acid in the stomach and intestines.

The determination of the acid was made in part by analysis, in part by crystallization of the zinc salt, and in part by the color test,

recommended by Prof. Ewald.* By this simple test the detection of lactic acid is rendered very easy. Unfortunately, the test can be applied only under certain conditions, since not only lactic acid and its salts, but also tartaric, citric, malic and oxalic acid with their salts, as far as I have tested them, give the same reaction. In order to produce the yellow color, it is only necessary to add to the violet solution a piece of fruit (apple, grape, plum, tomato, etc.,) or a few drops of white wine. All these acids must be eliminated before we can consider the reaction a conclusive test for lactic acid. As other products of fermentation, I was able to determine formic, acetic and butyric acid, the latter, however, only in small quantities.

Macroscopically, these different fermentations show very great differences, particularly in respect to the amount of gas produced. Very often lactic acid fermentation takes place without the production of a trace of gas, whereas some of the fungi now under consideration produce very large quantities of gas (CO_2 and H), so that the gelatine in the culture tubes is torn in all directions, and frequently a part of it is driven quite out of the tube, or the culture vessel is ruptured by the pressure of the gas. This copious development of gas can only be accounted for on the supposition that we do not have before us a pure lactic acid fermentation (according to the formula $\text{C}_6\text{H}_{12}\text{O}_6 = 2 \text{C}_3\text{H}_6\text{O}_3$), a supposition which was confirmed by the analysis which showed the presence of the above-mentioned acids. During the fermentation of half a liter of a beef-extract-sugar solution I collected 250 cc. of gas (CO_2 and H) in three hours.

Of these gas forming fungi I would like to call attention to five, which regularly form large gas bubbles in the gelatine or tear it in pieces, as represented in the figure. One of these fungi, which in albuminous substances also produces considerable quantities of gas (SH_2 and NH_3) was found in the fæces as well as in a gangrenous tooth pulp. Its presence in the latter place explains the manner in which dental abscesses may often be formed. If a tooth with a necrosed pulp is filled without previously removing the pulp and sterilizing and filling the root canal, the gas which is formed may make its way through the foramen at the end of the root, or drive particles of the decomposing pulp through with it. The irritation

* One drop chloride of iron, two drops carbolic acid, ten cc. water—violet color, which becomes yellow on adding lactic acid.

thereby produced gives rise (in most cases immediately) to an inflammation of the pericementum. In such cases it was formerly a custom, still practiced by a few, to drill a vent in the root to allow the gases and other products of decomposition to escape. It is not difficult to find among the clients of many German dentists mouths with a number of these vent-holes, which constantly discharge offensive pus, gas, etc., into the oral cavity.



Culture of a gas-forming stomach bacterium in bread-sugar-gelatine, one day old. Numerous small gas bubbles are not reproduced in the drawing. One - half natural size.

Three of the other four gas-forming fungi I found in the stomach, and one in the fæces. It is not difficult to see the disturbances that might be produced by an abnormal development of these fungi in the stomach or intestines. A further question of interest regards the peptonizing action, particularly of the fungi of the intestines. By far the greater number of the different species which I have examined grow well on boiled white of egg, and can therefore be said to possess a peptonizing action. In some cases the albumen became completely liquefied by the action of the fungi. Whether the fungi form more peptone than they need for their own nourishment, and whether and to what extent they may thereby be of use to the human body, is a question whose solution presents difficulties not yet overcome. In a large quantity of sterilized white of egg infected with a comma bacillus, I found traces of peptone at the end of the third day.

Very few of the fungi here treated of were found to possess any marked diastatic action. Of nine species which I examined specially with reference to this property, only one gave a decidedly affirmative result. By the action of this fungus starch was converted into sugar, and this again into acid.

It is generally taken for granted that a bacterium which grows on boiled potato must possess a diastatic action. Such evidence is, however, of little value, because the fungus is not dependent upon the starch of the potato alone, but may derive sufficient nourishment from the sugar and albumen of the potato to maintain its existence for some time.

Not one, out of more than fifty species that I examined, belonged to that group of micro-organisms called anærobian; *i. e.* no one of

them grew better or exclusively under exclusion of atmospheric air. On the other hand, I found every gradation, from those which showed no development whatever under exclusion of atmospheric air, to those which grew equally well with or without it.

The following conclusions may be drawn from the experiments described above:

(1.) A large number of the fungi of the alimentary canal are not restricted to one portion of it alone, but may develop either in the mouth, stomach or intestines.

(2.) In by far the greater number of cases the gastric juice will not prevent the entrance of fungi into the intestines. All fungi which I have examined may pass the stomach without losing the power of development, provided they are swallowed at the beginning of a meal. If, on the other hand, digestion is at its most active stage (two to three hours after the beginning of a meal), then those fungi more sensitive to the action of acids will be destroyed before they reach the intestines.

(3.) Lactic acid fermentation may continue in the stomach until the percentage of H. cl. reaches 1.6 to 1,000. If too little H. cl. is secreted, or too much food taken at once, the fermentation may become permanent. Diseases of the stomach, general disorders of health, fever, etc., accelerate the fermentation by interfering with the normal secretion of gastric juice.

(4.) Fermentation in the stomach may be more readily arrested with salicylic than with hydrochloric acid.

(5.) A large number of the fungi of the alimentary canal cause lactic acid fermentation in solutions of carbo-hydrates, whereby the frequent appearance of lactic acid may be accounted for. Other ferment acids, acetic, butyric, etc., I have observed less frequently and in smaller quantities.

(6.) Five of the species examined caused fermentation with formation of large quantities of gas, chiefly CO_2 and H.

(7.) It is impossible to make an exact division between those fungi which produce an acid and those which produce an alkaline reaction in a given solution; also between ferment and putrefactive fungi.

(8.) The majority of the fungi which I have examined manifested a peptonizing, very few a diastatic action.

(CONCLUDED IN THE NEXT NUMBER.)

INFLAMMATION OF DENTINE (EBURNITIS).

BY CARL HEITZMANN, M. D., AND C. F. W. BODECKER, D. D. S., M. D. S.,
NEW YORK.

It is a well-known fact that dentine becomes the seat of an inflammatory reaction by caries, as well as by the gradual destruction of the roots caused by alveolar pyorrhœa, whereby (in the latter instance), first the cementum, and afterward the dentine is destroyed. Another instance of an inflammatory invasion of dentine is observed during pulpitis, where first the secondary and afterward the primary dentine are destroyed by an inflammation of the pulp tissue. Aside from these secondary forms of inflammation, there occurs a primary inflammation in dentine, independent of pulpitis or pericementitis, running its course in the middle of the dentinal tissue, and leading, as all inflammatory processes do, either to a new formation, or to destruction by suppuration. This primary inflammation of dentine is the subject of our paper.

As to the causes of "Eburnitis," as the writers propose to term this process, there are a small number of cases in which nothing can be observed that would account for an inflammatory reaction in the dentine, which, although alive, is far away from the blood vessels throughout. In a few specimens we observed nothing anomalous in the soft parts surrounding the root of the tooth, nor in the pulp tissue. Some preparations exhibited a slight degree of pericementitis, with the characteristic superficial erosions of the cement tissue. In other cases we noticed a layer of secondary dentine, indicative of an increased activity of the pulp tissue, although no pulpitis was visible. In all cases of eburnitis, however, we observed in the dentinal tissue itself a striking feature; an incomplete calcification of the dentine, and a great abundance of interglobular spaces, signifying a malformation and an incomplete calcification of the basis-substance. This accounts for its greater vulnerability and susceptibility to irritative processes. The enamel, in ground specimens, will likewise show abnormalities, such as pigmentation, stratification, or insufficient deposition of lime salts.

Far greater are the number of instances in which traumaticism has led to an inflammation of the dentine. It is evident that any surgical interference, such as burring or excavating, will in an

otherwise normal dentine produce irritation sufficient to result in an inflammatory reaction. If, in addition to excavating, a caustic is applied, or a filling inserted, which may exert a certain amount of irritation, inflammation of the dentine must necessarily follow.

We know, from practical experience, that when a caustic in the form of an oxychloride or an oxyphosphate filling is applied to very sensitive dentine, this tissue, in the course of time, will become less sensitive by the partial destruction of the living matter in the dentinal wall of the cavity. The filling material in this manner excites an inflammatory reaction, which in the course of months or years results in a new formation of dentine around the filling, and this is often denser than the original dentine. Thus, in dental practice, we take advantage of this fact, and prior to the introduction of gold, fill very sensitive, or soft teeth, with oxyphosphate or oxychloride of zinc. This hardening, as the most favorable result of traumaticism, is the consequence of an inflammatory reaction of the dentine, known under the term of consolidation. On the other hand, instances are not rare in which the insertion of an oxyphosphate, oxychloride, or a gold filling gives rise to excruciating pain, sometimes even necessitating the removal of the filling. The latter result is due to intense and acute inflammation of the dentine, manifested probably through the medium of the dentinal fibres encroaching upon the pulp tissue. Such unfavorable results are met with mainly in patients whose teeth are badly calcified, or in temporary teeth, in which the amount of living matter is much greater than in the average permanent teeth.

The best known instance of traumaticism applied to dentine is the elephant's tusk, in which a bullet has lodged. The remarkable changes of the dentine in these instances are well known to scientists as well as mechanics. As early as 1798, the great German poet, Goethe,* investigated the subject of diseased ivory from the elephant's tusk, resulting from the impaction of iron or leaden balls; the process appeared to him to be a sort of coagulation (*Gerinnung*); he also mentions the occurrence of exostosis upon the wall of the pulp cavity, in cases where a ball entered the posterior, weak and hollow portion of the tooth. Cuvier likewise recognized the irregularity in the dental mass around the balls. Richard

* The Pathology of the Teeth, Philad., 1872, pp. 188 and 301, *et seq.*

Owen* also noticed the histological changes in elephants' tusks produced by musket balls. On Page 643 we read :

"It is not uncommon to find processes of osteo-dentine, or imperfect bone-like ivory, projecting in a stalactitic form (1) into the interior of the pulp cavity, apparently the consequence of partial inflammation or malformation of the vascular pulp. The musket balls and other foreign bodies which are occasionally found in ivory are immediately surrounded by osteo-dentine in greater or less quantity."

Carl Wedl, in describing the changes in ivory produced by bullets, remarks :

"We are indebted to J. Tomes for the very thorough description of cavities of this nature in two tusks. The dentinal substance in each of the two tusks presented a newly formed cavity, having no connection with the pulp cavity, nor indeed any outlet. * * * By the kindness of Prof. von Schroff, I had the opportunity of examining segments of elephants' tusks which were labelled ulcers. They contain extensive abscess-cavities in the dentine, apparently entirely shut in, of the size of a pigeon's, hen's, even of a goose's egg. * * * If we trace the process of resorption of the ivory from the side of the encroaching osseous tissue, it will be observed that both the main trunks and the lateral branches of the dentinal canals present numerous varicose expansions, while portions of them are transformed into jagged, elongated cavities, or give place to a globular transparent substance. In other portions, large, multiradiating bone-corpuscles have encroached upon the dentine. * * * The chronic inflammation of the periphery of the abscess (Abscesshaut) in these cases, led to the production of solid tissue (osseous and dentinal), both of which must have been developed from cells. But even if we are willing to admit that the blood vessels of the new-formed substance are derived from other pre-existing ones, still the appearance of the new osseous and dentinal substance in the wall of the abscess-cavity continues to be an extraordinary phenomenon, and the assumption in relation to their appearance, that the cell-life of the connective tissue parietes of the abscess is exalted to a differentiation as in embryonic life, is open for discussion, since, indeed, we cannot by any means presuppose that the germs of the formative cells are transported to the part with the blood. * * * The molars of elephants being enclosed within the mouth, are less liable to be penetrated by balls. A case in point, however, is illustrated in Fig. 89, where in a molar an osteo-dentinal mass, inclosing a flattened leaden ball, is interposed between the folds of the enamel on the other side in the substance of the dentine and is in relation with the cement. * * * If the three dental substances be traced out, it will be seen

* Odontography, London, 1840-1845, p. 646.

that the enamel at a certain distance from the fragment of the ball, and also the dentine, have been displaced by a substance which forms an investment of varying thickness around the fragment of the ball, and when traced further, is found to enter into immediate connection with the cement. Hence the new formation was developed by a proliferation into the enamel and dentine. * * * I endeavored to identify in the dried mass which lines the cavity of an abscess a vascularized connective tissue, from which the blood-vessels, that are prolonged toward the ivory, may possibly have originated, but was unable to come to any satisfactory conclusion in consequence of the marked degeneration of the mass. * * * We find, then, that in the vicinity of these chronic abscesses also a more vigorous reparative tissue is developed in the place of the less vigorous; in other words, an interstitial growth of osseous substance ensues in the vicinity of the cavity of the abscess. * * *

Thomas Bell* reports a case as follows: Mr. S., a medical gentleman, had long been suffering extreme pain in the right side of the lower jaw, apparently produced by the second molar tooth, which, however, had no external marks of disease. After a time, inflammation took place in the periosteum of the root, and the tooth was in a measure loosened. As it now became evident that the cause of the pain, which still continued to the most excruciating degree, was produced by this tooth, it was extracted, and as no diseased appearance was found on its surface, I sawed it asunder at the crown, and found a cavity in the solid bony structure, perfectly circumscribed, the surrounding bone being white, and of a healthy and sound texture. Not the slightest appearance of disease existed in any other part of the tooth, excepting that from the inflammation which had so long existed the membrane had also begun to suppurate. In this case, then, it appears that inflammation had occurred from some local cause in the bone of the tooth; that the vessels of the bone had formed pus, and that absorption had taken place in consequence of its pressure, and formed a cavity for its reception.

Edward Albrecht† also mentions the occurrence of abscesses in the dentine, but believes that they are the result of pulpitis, these cavities being, by a new formation of secondary dentine, separated again from the pulp cavity, although he found the abscess cavities filled with pus.

The present writers have had no chance to study an elephant's tusk immediately after its injury, but the illustrations as given by Carl Wedl are sufficient for the assertion that all the changes in the ivory are produced by an inflammatory reaction around the foreign body driven into it. The result in this instance is exactly the same

*The Anatomy, Physiology and Diseases of the Teeth, Philadelphia, 1830, p. 171.

†Die Krankheiten der Zahnpulpa, Berlin, 1858.

as in human dentine in an inflamed condition, caused by foreign bodies.

In order to realize the structural changes in inflammation of the dentine, let us remember that it, like bone, is a living tissue. The analogy between these two tissues is clearly established upon the fact that, in the development of bone tissue, we observe globular territories, the same as in the formation of dentine. In the former instance every territory contains one or more bone corpuscles, with their off-shoots (lacunæ and canaliculi), whereas, in the dentine, the territories are pierced by the canaliculi and their tenants, the dentinal fibres. The basis-substance in both these tissues is traversed by a large amount of living matter, in the shape of a delicate reticulum, the meshes of which are filled with the calcified basis-substance proper. The study of the history of development of bone and dentine reveals a striking similarity in the formation of both of these tissues. The osteoblasts are preliminary formations in developing bone tissue, in the same manner as are the odontoblasts at the periphery of growing dentine. All attempts to explain the development of dentine directly from the odontoblasts have proved unsuccessful, as neither the formation of the basis-substance nor that of the dentinal fibres could ever be brought in accordance with the elongated odontoblasts, whereas, the development of the dentine becomes plain, if we take the ground that the odontoblasts break up into medullary corpuscles, between which the dentinal fibres are formed. If the odontoblasts would calcify directly, we were at a loss to understand the formation of globular territories in fully developed dentine. If, on the contrary, we accept the formation of basis-substance from medullary corpuscles, the appearance of globular territories becomes plain. Nothing is required but a group of medullary corpuscles, which are transformed into basis-substance, while the larger threads of living matter, known as Tomes fibres, traverse the rows of medullary corpuscles, taking their course between them. Six years' study of the history of development of the teeth, especially of specimens of the sixth month of intra-uterine life, when dentine begins to form, has led us to the conviction stated above.

Inflammation causes a solution of the lime salts, and afterward a liquefaction of the basis-substance, both in bone and dentinal tissue. The result will be the appearance of globular spaces, or bay-

like excavations, which, instead of being-filled with basis-substance, exhibit medullary corpuscles, or multinuclear protoplasmic masses, corresponding to the embryonal stage of the inflamed tissue. (See Fig. 1.) The excavations of the dentine are identical with those seen in the process of absorption of the dentine of temporary teeth, and those of secondary dentine in the neighborhood of an inflamed pulp. The diagnosis of primary eburnitis becomes established, not by the appearance of such excavations, but by their presence in the middle of the dentine without any connection with the surface, or the pulp chamber of the tooth.

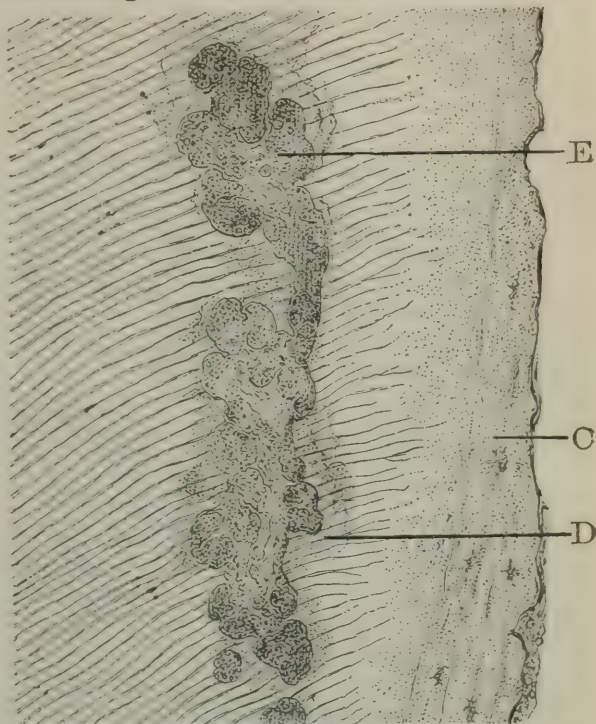


FIG. 1.—*Eburnitis*; neck of tooth. C, cementum, with shallow excavations at its periphery, caused by pericementitis. D, dentine in the beginning of dissolution of lime-salts; E, protoplasmic masses in globular territories. Magnified 200 diameters.

The earliest feature of eburnitis under the microscope is the appearance in the middle of the dentine of bay-like excavations of varying sizes, and separated from one another by glistening ledges. At first the dentinal canaliculi and their tenants (the Tomes fibres) remain recognizable within the basis-substance. In the next stage only dentinal fibres remain discernible, whereas the contours of the canaliculi are lost, and the basis-substance itself looks irregularly granular. The difference in the refraction of light of these globular spaces, as compared with normal dentine, indicates a dissolution of lime-salts within them. In a still further stage the whole basis-substance is transformed into a granular mass, which is easily stained by an ammoniacal solution of carmine. The globular spaces appear to be filled with multinuclear protoplasmic masses, or with a number of medullary corpuscles, more or less coarsely granular, and flattening each other to some extent. These features, therefore (as mentioned), are identical with those observed in ab-

sorption of temporary teeth, the only difference being that the latter process starts from the periphery, whereas eburnitis begins in the middle of the dentine, without any direct connection with the outer surface or the pulp cavity of the tooth, and often at the border of cavities that previously have been filled. (See Fig. 2.)

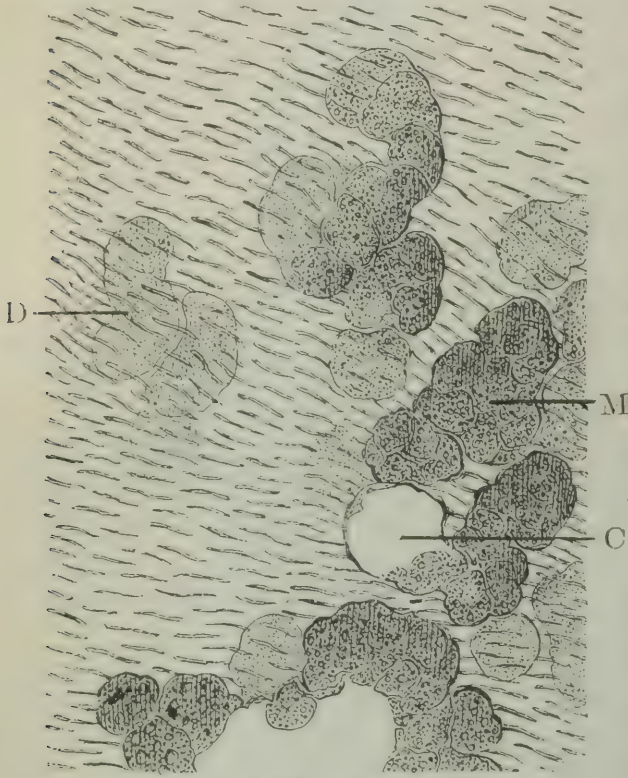


FIG. 2.—*Eburnitis; crown of molar.* D, beginning dissolution of lime-salts in the middle of dentine; M, medullary corpuscles filling the globular spaces that have arisen from inflamed territories of dentine; C, cavity in the dentine, whose contents had been dragged out. Magnified 500 diameters.

many of them were isolated, and sometimes far apart from the original seat of inflammation and far from the pulp-chamber as well as the periphery of the the tooth. In connection with eburnitis we frequently have noticed that the crowns of teeth thus affected were surrounded by defective enamel. No doubt can arise that the medullary corpuscles present in these spaces have really grown from dentinal tissue, respectively, from the living matter of the dentinal fibres as well as that of the basis-substance.

In some of the specimens, especially in the central portions of somewhat larger cavities, the medullary tissue, by the process of grinding or cutting, had been removed. Where, however, they had been left in situation, the medullary corpuscles appeared inter-connected by means of delicate off-shoots, representing an embryonal

The origin of the globular fields of dissolution in temporary teeth, in some instances, may be questioned, since it is admitted that they are simply the results of the dissolution of the lime-salts, while their filling in with medullary corpuscles may be caused by immigration from without. But in all the specimens of eburnitis which we have examined, no doubt was left as to the primary origin of the spaces and their contents within the dentine, for

tissue. Or no distinct boundary lines were seen between the medullary corpuscles, the whole filling of a globular territory being a uniformly granular protoplasmic mass, with interspersed nuclei. We cannot deny the possibility that by the breaking apart of these medullary corpuscles pus may be formed in the middle of the dentine, thus representing an abscess independently of the pulp tissue. Wedl and Albrecht take the presence of blood-vessels, presumably grown into the dentine from the pulp, for an absolute necessity in cases of abscess of the dentine. Such a presumption is superfluous, in our opinion, for we assert the dentine to be a living tissue, and as such capable of primary inflammation, nay, suppuration, without a direct co-operation of blood-vessels. We fully realize the possibility that even a so-called pyogenic membrane around the abscess could form without a direct supply of blood-vessels. If others have claimed that an abscess in the dentine must have formed originally in connection with the pulp-tissue, and afterward been separated from the latter, we again deny any such occurrences, since we admit the possibility of the formation of a primary abscess in the dentine, independently of the pulp-tissue.

Far more common than suppuration, however, is the healing process of eburnitis, the results of which may be either a new formation of dentine, closely resembling secondary dentine, or a dentine which is destitute of canaliculi, representing what authors have termed osteo-dentine. In a former publication on "The Distribution of Living Matter in Human Dentine, Cement and Enamel" (Dental Cosmos, 1878), the fact was mentioned that in some teeth certain portions of the dentine are composed of basis-substance only, and devoid of dentinal canaliculi. Later observations have proved that such appearances are due to a very perfect healing of a former inflammatory process. We meet with places in the dentine, more especially in the neighborhood of fillings of some years' standing, wherein the dentine is largely composed of calcified basis-substance, and the dentinal canaliculi are arranged in bundles more or less apart, but of a normal appearance. It is obvious that here the recalcification of the previously inflamed dentine was the most perfect, producing a tissue which is harder and richer in lime salts than the original dentine. For practical purposes, this is the most desirable result obtainable, and it is one of the principal reasons

why, in badly calcified teeth, oxyphosphate or oxychloride of zinc should be employed prior to the introduction of a gold filling.

In a second instance, the newly formed tissue closely resembles secondary dentine, with few, irregularly scattered, wavy canaliculi, and large territories of calcified basis-substance, destitute of canaliculi. Sometimes the basis-substance may be uniform in structure, or composed of globular fields or territories, as described in the article on "Secondary Dentine" (Dental Cosmos, 1879.) The

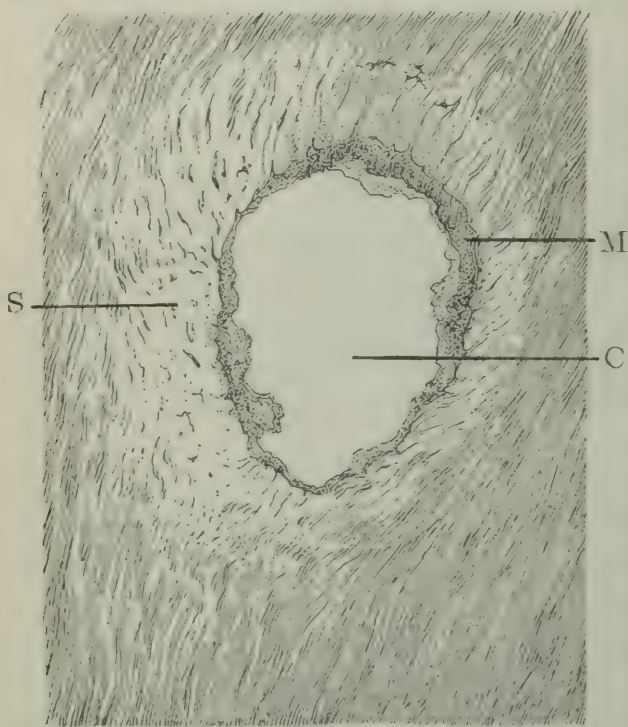


FIG. 3.—Healing of eburnitis; crown of molar. C, empty cavity; M, medullary tissue, at the border of the cavity, partly calcified; S, secondary dentine, with scanty and irregularly scattered canaliculi. Magnified 100 diameters.

tissue as such under the microscope could not be distinguished from secondary dentine; the fact, however, that it was found far from the pulp chamber, in the middle of otherwise normal dentine, proves that it is the result of a previous inflammatory process of the dentine. Here the calcification still attained a high degree of perfection, desirable from the practical standpoint, although morphologically not as perfect as in the first instance. Fig. 3 illustrates this kind of a healing process of eburnitis.

Here the cavity, whose soft, medullary contents had been dragged out in the process of grinding, is surrounded by a tissue bearing all characteristics of secondary dentine.

Another result of eburnitis is the reformation of the basis-substance, composed of small globular masses, between which are visible irregular and widened canaliculi. It is obvious that calcification in this instance is deficient, and consequently the newly formed dentine is less consistent than normal dentine. In one of our specimens, dentine of a temporary tooth, we observed not far apart two spots, one of which shows a large amount of basis-substance, with

scanty and narrow canaliculi, whereas another spot was in the condition before described, viz., scantily calcified. The latter portion exhibited well marked globular territories all around a cavity, which probably contained medullary tissue, before subjection to the process of grinding. Some territories contain numerous and wide canaliculi, others scarcely any. Crystals of hæmatoidin indicate the inundation of the inflamed tissue with blood, in the acute stage. As this cavity was near the pulp-chamber, the saturation of the tissue in consequence of a hæmorrhage is explicable. (See Fig. 4.)

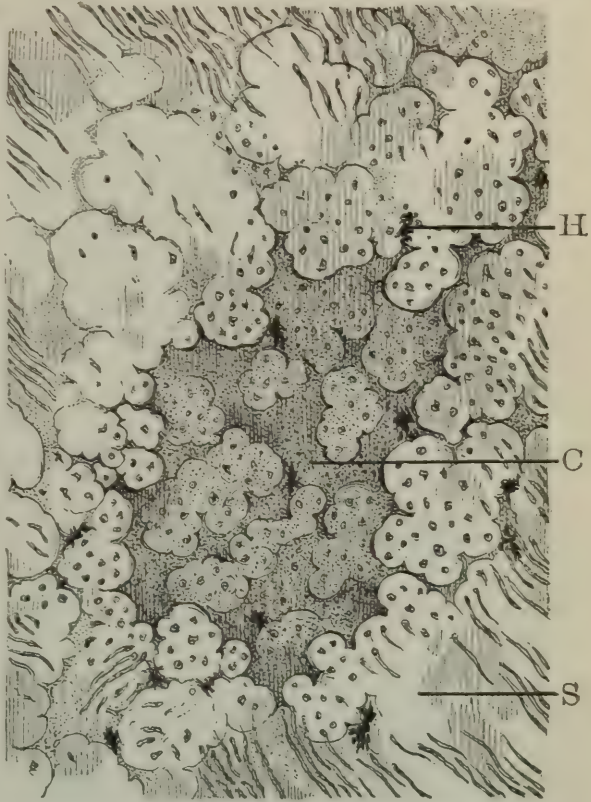


FIG. 4.—Healing of eburnitis; crown of bicuspid. C, cavity bounded by globular territories between which there are uncalcified interglobular spaces; S, secondary dentine; H, Crystals of rust brown hæmatoidin. Magnified 500 diameters.

In a fourth instance of eburnitis the healing process is rather poor. There are no new canaliculi formed, but the whole field is traversed by irregular, angular, branching spaces, with numerous radiating off-shoots, bearing a close resemblance to bone corpuscles. The presence of such spaces gave rise to the term "osteo-dentine," applied by previous authors. We would agree with this term if the restriction be added, that in these instances no regular bone-tissue is combined with dentine, but only a tissue resembling bone. The spaces are filled either with medullary corpuscles, or a homogeneous basis-substance, or highly refracting globular masses, the result of a late but rather imperfect deposition of lime salts. The basis-substance between these spaces is likewise composed of globular calcified masses, between which we observe branching off-shoots of the spaces. The periphery of a spot of healed eburnitis may show small spaces scantily scattered in the basis-substance, whereas, the central portions may exhibit very large spaces and comparatively

little basis-substance. Fig. 5 illustrates such a termination of eburnitis, partly with a tolerably well developed secondary den-



FIG. 5.—Healing process of eburnitis; root of molar. *B*, secondary dentine, with scanty canaliculi and a globular basis-substance; *S*, spaces resembling bone-corpuscles, with very irregular, branching off-shoots; *G*, globular depositions of lime-salts in the basis-substance. Magnified 500 diameters.

Evidently the healing process of eburnitis is the poorest in the last instance, leading, as it were, to the formation of a comparatively soft, brittle and crumbling dentine, lacking the elasticity of the original tissue, and not entitled to the name of dentine proper. From the description given of healed eburnitis around gun-balls in elephants' tusks, it is obvious that the mass, as described as a result of "consolidation" or "coagulation," etc., is such a poorly calcified dentine, or osteo-dentine.

THE DUTIES OF A DENTIST TO HIMSELF AND OTHERS.

BY G. L. CURTIS, D. D., SYRACUSE, N. Y.

ANNUAL ADDRESS BEFORE THE UNION MEETING OF THE FIFTH AND SIXTH DISTRICT DENTAL SOCIETIES OF THE STATE OF NEW YORK AT BINGHAMTON.

It is my purpose briefly to sketch a few things observed in everyday life, and to throw out to the younger dentists a few suggestions which, if observed, cannot but aid him in starting in his preferred calling.

Having selected a school of high grade and taken therefrom a diploma admitting you to practice in any part of America, if

already a location has not been selected you turn your efforts to this end. Having made your selection, the question may arise whether you will pull alone in the race or follow after the older practitioner, your neighbor next door, and whether or not you will make his acquaintance. I can only from observation state that it is better under all circumstances to be on good terms with the older practitioner, through whose efforts you have attained your knowledge, and of whose counsel you, as a progressive dentist, cannot afford to deprive yourself. There is but little pleasure or satisfaction in isolation, and it is only selfishness that prompts such action. Therefore, be respectful to your superior and try to be as he, a benefactor and blessing to those who seek your services, at the same time remembering that it is to you a compliment, and not to him, if the friendship is mutual.

We all have some aim in life. Some strive for excellence in their vocation, some for position, and some to obtain wealth. The first resolution is a noble one, and you and I cannot aim too high in compassing it. It is the only way to success. In every way prepare yourself to meet the demands made upon you, and in all your efforts let the last be the best. Take the latest and best literature of the day, and carefully study it. (I fear this suggestion might to advantage be adopted by many of our older practitioners.) Reading alone, however, can accomplish only a part. Sift thoroughly the good from all, and put the best into practice. Be conscientious in all your operations, and never allow a piece of work to go from your office until it is finished to your own satisfaction. Please yourself, and your patient cannot but approve your services. Make good your losses to your patients, and never lose the opportunity to make good a failure without expense to him, by repairing or doing over a piece of work which did not at first meet with success. In giving advice never say a piece of work cannot be done because you are not equal to it, when you know another man can do it. Either learn how to do this yourself, or refer the inquirer where it can be accomplished.

Great caution should be exercised in extracting, and I believe it should be made a criminal offense to remove a tooth when it can and should be saved, even though the patient demand it.

In these days, when everyone is taught and should know the value of teeth, the man who gives way to such requests belittles himself

in the mind of his patient, and leaves a stain upon his own conscience for life, for teeth are to man what the mill is to the grain.

Strive to be a credit to the community in which you live, as well as a guide to others. There is no better way to gain position in dentistry or in society than by being a *man*, for manliness, above all things, commands respect. Be true to yourself and all with whom you come in contact. Never shrink from duty. Maintain dignity in your office, and never, above all things, lose your head.

Wealth is the least of all for which we in this life should exclusively labor, for a more selfish aim one cannot possess. Always thinking of the comfort and welfare of others, the dentist, above all men, should be the last unduly to strive for riches, and if you will pause for a moment to consider that never, as yet, has a dentist become rich from his own labors, you will discard this object in life and aim for a nobler one. What is wanted by the American people is an educated, energetic, wide-awake dentist, and to keep abreast with the times of to-day you must, at least, be better advised than those you are called upon to serve. We do not live in those good olden times, ages ago, when haste was rarely considered, and time was not associated with daily life and the duties of existence. When we consider the way in which time was once spent in all and everything that was done, one can readily account for the long and easy life, and the methodical ways in which their work was accomplished. This condition of affairs is even yet prominent in some parts of Europe, and they still hold fast to the opinion that anything done by the active, energetic American is a kind of "Yankee notion," of short duration, and not worthy of note. Hence the conservative way of the English, who are of all nations perhaps the last to accept a new idea or to put into practice a new theory. It is the American, full of life, of energy, always ready to meet all emergencies, who knows not the definition of the word "impossible," and who has stamped in his very face that look so forcibly described by Herbert Spencer as a "do or die" expression, who has brought dentistry up to its present high standard and helped to make America what she is to-day.

In society work it should be our highest purpose to elevate the standard by doing all in our power for the good of the society and one another. Attend regularly the stated meetings, remembering that you are the loser when you remain away, and that it cannot be

made up to you by money. We often hear the young man remark: "Oh, I cannot afford to attend these meetings, I would lose so much time." This is a great mistake, which you may not see till it is too late. Bring the best material to the front and welcome the efforts of the younger members, thus encouraging them to do greater things.

Now for a word to the old practitioners. Conscious of the fact that he was once young, he should in every way try to encourage and aid his followers in the right direction, for it is good to work together in unison, and what is more gratifying than to see the old and young in council. We too often, however, find a well established dentist like the cat, ready to pounce upon the harmless young canine the instant it comes into its vicinity, and never to show him any quarter till he proves himself master of the situation, after living down the impositions thrust upon him in every conceivable way. True to the conception of a clerical friend, "sanctification sometimes means scorchification," and in order to be sufficiently tempered to meet cheerfully the taunts and slurs of the jealous competitor, who always has a bland smile of pretended friendship for you, it seems necessary to pass through this furnace of friendly hatred in order to get a peep into the inward workings of those who, by chance, perhaps, have slipped into dentistry, and feel that they alone wish to be recognized as the dentist, and who try to maintain this position by depreciating the works and abilities of their neighbor, who perhaps in more ways than one is his equal or superior. This is not only a wrong course to adopt, but it is unprofessional and unbecoming a gentleman, and it is only a question of time, among the better class of dentists at least, when this will be a thing of the past.

WAIL OF THE SECOND BICUSPID.

BY DR. CHAS. JENKINS, DRESDEN.

READ AT THE THIRTEENTH ANNUAL MEETING OF THE AMERICAN DENTAL SOCIETY
OF EUROPE, HELD IN BERLIN, AUGUST, 1885.

My acquaintance with your profession began with the attempt of Dr. Tendergreen to regulate my neighbors. This he did at my expense, in the following manner: He set a jack-screw between

the right superior cuspid and myself, intending to push the former out. Naturally I was no match for my long-rooted, stubborn antagonist, especially as I was not backed up by the first molar, which had been nearly bored to death, poisoned entirely, pounded to pieces, drawn and quartered by this same practitioner. I was, therefore, pushed out against the cheek about half the distance of my longer diameter. Here was food for reflection, but Dr. Tendergreen was not hungry; he never thought. On graduation at the Dental College he believed that his student-life was already over, instead of just begun. "If I have only sufficient confidence in myself," he said, "I shall succeed." Truth was, self-confidence was the only qualification of which he had a complete outfit.

Without further consideration, he now placed a ligature from the right lateral incisor, which pulled me as far inside the arch as I had previously been outside of it. There he kept me for three months in a position affording space for food, which neither the brush nor the tongue could fully remove. Result, a cavity on my approximal surface. This was filled the next year by Dr. Hammer-Tongs. This gentleman's perfectly sound theory was this: Cohesive gold can be made hard enough to resist successfully all the forces of mastication. Having tested this theory by biting on one of Dr. Hammer-Tongs' fillings, which fell out of my second molar neighbor, I am inclined to regard it as a well-established fact.

But the Doctor's undaunted skill did not prevent a minute cracking of the edge of the enamel at the neck, leaving an invisible interstice above the gold, so that the fluids of the mouth found an open road beneath the filling, whence they burrowed into my vitals, softening the bone down to the pulp chamber. Then came—*Tooth-ache*.

The next day my lady went meekly to Dr. Putty and begged him to relieve her. He had been recommended to her as a gentle operator, who practiced "dentistry without pain." Nor was his reputation entirely undeserved, nor fairly describable by the ill-natured gloss of his rivals, who said that dentistry without pains was a paradoxical phrase. Dr. P. removed the plug, applied oil of cloves, and waited a day or two for the inflammation to subside; then he repeated the operation, this time slightly exposing the pulp. At a third sitting he covered the tender spot with carbolized cork dipped in oxide of zinc, flowed oxy-chloride of zinc upon this

cap, and after it had hardened he filled the remainder of the cavity with amalgam. There was slight discomfort, scarcely to be called pain, and a feeling of insecurity for several weeks, during which the pulp being scientifically smothered, died the calm and peaceful death of the righteous; in fact, it died unnoticed.

However, her ladyship soon began to be troubled with neuralgic pains, distributed well nigh impartially over the whole right side of the face. These were imputed by her physicians to several extraordinary causes, till at last one pill-prescriber, less ignorant than the others, passing his finger along the upper row of teeth and discovering a tender spot, advised her to consult Dr. Fumble. The latter diagnosed incipient periostitis, and proceeded at once to open up the right superior second bicuspid. The pulp chamber was found full of septic matter. In one of the canals there was still a live pulp. This Dr. Fumble thought he could save by the capping process, which so far from insuring immunity from pain proved a source of the greatest irritation and distress. He waited till the inflammation reached its height, when he applied arsenic, of which it required three doses to bring matters to a crisis. To further illustrate the beauties of capping, he capped the climax by pushing a broach up this pulp canal and breaking it off, firmly wedged, with the dead matter securely stopped in above it.

I do not need to explain to you what followed this treatment, but one fine morning my lady rose with a face as round as the sun's, and a fit model for the brush of a Dutch painter. She now took especial pains to consult the highest attainable authority, and went to Dr. Cleverfingers, whose skill in manipulation had won him a wide reputation. His firmness and delicacy of touch were in marvellous contrast to all my former experience. He took out the filthy cotton, and with a variety of devices, broaches wrapped in cotton, wisps of bibulous paper, applications of absolute alcohol, etc., made an almost perfect cleansing and disinfection of the canal. The Doctor's patience and thoroughness were only equalled by the patience of the sitter, whose confidence was greatly strengthened by his kind yet firm manner. However, the obstruction in the canal caused him much perplexity. As the canal was thin and wide, he managed to find a passage for a very fine broach by the side of the rusty old intruder inserted by Dr. Fumble. He carried the merest thread of cotton wet in carbolic acid up to the foramen,

but the cotton slipped down part way during its progress, and the point of the fine instrument passed through the foramen and remained, as in the case of Dr. Fumble. Seeing that the broach when withdrawn was entirely covered by the fibers, he smiled in triumph. Never a case yet in which, by patient perseverance, he could not reach the foramen. He introduced a paste of iodoform into both canals, and when all signs of irritation had passed and he judged the disinfection to be complete, he proceeded to fill the canals with oxy-chloride of zinc. I am bound to say that the Doctor showed extraordinary skill in this manipulation, and I am also bound to say that he overestimated his success.

He filled the main cavity with gold the next day, and my lady was dismissed with the assurance that all was now done that science could do. That night she slept the sleep of the innocent, but next morning she felt a slight tenderness in the region where so much skill had been bestowed and so many blows had been administered. Delaying, however, to consult the doctor, in the hope for a recovery without help, she was called suddenly to make a journey, and having caught cold the irritation grew steadily worse, so that she was obliged to consult Dr. Dareall, who was in the habit of using heroic remedies, from which marvellous cures were reported. Dr. Dareall attempted to bore out the cement in the nerve canals, and succeeded in forcing his drill to the point of the root—almost—when it pierced the pericementum just below the foramen. The result was not so immediately disastrous as there was reason to expect, and yet this was the last straw that broke my lady's patience. She knew "something had happened," she said, and she would let the tooth decay in her head, or be drawn if it gave pain, rather than consult the profession again. The doctor managed to quiet the pain in the abscessed region, and a fistulous opening having been finally established through the alveolus, he was able to pump through a solution of carbolic acid and glycerine, whereupon he declared the abscess cured. From that day to this the cured abscess has behaved like a small Vesuvius, remaining quiet sometimes for months together, and then most unaccountably resuming activity for a few days or weeks, and then subsiding again for another period of deceitful rest.

But why should I, an old and decayed root, half covered with gum and filled with foul debris, recite any further the wrongs

inflicted upon me by your profession. Would it be any use to relate the particulars? Are you not notoriously insensible to the woes you systematically inflict? Just look at the items and sum total and see what constant irritation of the pocket nerve has resulted in my case.

Here are the charges:

Dr. H.-T., one double gold filling.....	30	marks.
Dr. Putty, capping nerve and filling....	30	"
Dr. Fumble, treatment and refilling....	60	"
Dr. Cleverfingers, " " "	75	"
Dr. Dareall, for curing abscess.....	60	"
Dr. Pivot, for false crown.....	75	"
Dr. Bang, binding together the split root and repivoting.....	120	"

Total for keeping one tooth in perpetual misery and securing its utter loss in seven years, 450 M., or \$110. I think from observation that, as bicuspid go, I am only an average case. There is a kind of comfort in that.

TOOTH CROWNS.

BY SAMUEL F. HOWLAND, D. D. S., NEW YORK.

Thirty years ago there was but one general method of crowning roots of teeth, and that was by the simple mode of setting a porcelain crown, made for this purpose, on a root, securing the same in place by a wooden dowel. This process of crowning was slightly in its results, but uncleanly, unendurable and unserviceable.

There are many crownless teeth, the bicuspid predominating, yet for this old method crowns were provided for only the six upper front teeth. Bicuspid and molars were forced to remain uncrowned, and were often extracted and their places supplied with teeth on plates.

It once seemed to be the chief business of the dentist to sacrifice teeth; now, it is to save them. It is only within a few years that teeth with devitalized pulps have been successfully treated. Now nearly all teeth and roots may be preserved when it is desirable so to do.

It is well known that natural teeth, which have a normal daily service, are kept in better condition than those which are idle; like

other members of the body, work is needful for their health. It is also a fact that many crownless roots which have long been idle and diseased, when properly crowned and given their natural work to do are restored to health and strength.

Within a very few years many new methods of crowning roots have been devised, and the work has received a strong impetus. Among the many new crowns introduced, some are valuable, while others are useless. The best, in some important respects, are deficient. The principal requisites for a tooth crown are naturalness, strength and a secure fastening. With these secured, durability and serviceableness follow.

Recognizing the necessity for something which I had not as yet found, I set about trying to remedy the deficiency, and the result has been a device which I now desire to present to dentists. The crown to which I would call their attention is for a bicuspid, with a bifurcated root, or its equivalent, having two canals, as this permits the fastening by two pins, instead of one; but crowns for this method are made for all the teeth. It is of porcelain, made hollow, and of sufficient size to receive the pins, yet not so large as to impair the strength of the crown. One feature which many will appreciate is, that no metal is to be seen after it is once set. So far as art is able to imitate nature in the construction, it is natural and beautiful, and consequently it will be appreciated by the patient.

The manner of setting is very simple. After the root has been cared for preparatory to this work, it is cut a trifle shorter than the gum with a stump file. A crown of proper size, length and shade is selected, and ground to fit the concave end of the root. The two canals are then enlarged sufficiently to readily receive the threaded pins, made of stiff wire for this purpose. The canals are then partially filled with zinc-phosphate, and with pliers each pin is pushed to its place. To perfect the joint between root and crown, a small quantity of amalgam or warm gutta-percha can be placed on the end of the root and the crown pressed against it. Lastly, the crown is filled with zinc-phosphate and pressed to its place, holding it firmly until the cement has set. If it is desired a gold band can be used. Fit the band on the root, letting it extend a little beyond the end of it, covering so much of the crown as is desired. This is advisable if the root is friable, as it gives additional strength and security to the whole.

I have been inserting crowns in this manner for a number of years. So far they have given excellent satisfaction, and not one has broken so far as is known. It is offered with the hope that it may be of benefit to those who desire a simple and practical method for extending the usefulness of a large class of broken down teeth.

Reports of Society Meetings.

FIRST DISTRICT DENTAL SOCIETY OF NEW YORK.

REPORTED EXPRESSLY FOR THE INDEPENDENT PRACTITIONER.

This society held its regular monthly session at the depot of the S. S. White Dental Mfg. Co., on the evening of February 2d; the President, Dr. W. Carr, in the chair. Dr. C. F. W. Bodecker, chairman of the Clinic Committee, reported as follows:

There were over one hundred persons present at the clinic to-day, and the operations performed were very instructive. Dr. C. B. Parker, of Brooklyn, presented a patient about fifteen years of age who, three years ago, broke the right upper central tooth across the middle in a horizontal direction, exposing the pulp, which at that time was capped, and the tooth filled with Smith's oxy-phosphate of zinc. Last fall Dr. Parker removed the cement, and restored the contour of the tooth by a piece of porcelain. The anchorage for the latter was obtained in the dentine near the boundary of the enamel, around the pulp, which was found alive. The color of the porcelain had been matched so perfectly, and the adjustment to the tooth had been done so skillfully, that close examination was required to detect the former defect. Dr. Parker, in the clinic this afternoon, adjusted a similar piece of porcelain upon a left upper central tooth, but this case was not as favorable as the one mentioned before. The tooth had lost its mesial corner, and the adjacent enamel was very thin and transparent, making it difficult to match the porcelain, but the operation, when completed, was very neatly done.

Dr. C. H. Land, of Detroit, Mich., exhibited his new muffle gas furnace, which, by all experts present, was acknowledged to be the best gas furnace ever presented to the dental profession. In this furnace, the construction of which is based upon scientific principles, the gasing of the work is entirely prevented. Dr. Land also presented his new porcelain-faced crown and bridge work, which is made as follows: A piece of thin platinum (about No. 30) is tightly fitted around the broken crown or root of a tooth, which

has been previously trimmed on its labial (or buccal) and proximate surfaces sufficiently to make room for the new material to be adjusted; then an ordinary plain plate tooth, of required shape and shade, is ground out so thin that, when held in place upon the platinum cap, it occupies the proper position. This thin porcelain face is then baked upon the platinum cap with a body especially prepared for the purpose.*

Dr. C. A. Caulkins exhibited in his own mouth an extensive piece of bridge work, made by the Sheffield Co., which had utterly given out with three months' wear. Dr. Caulkins, being present at the meeting, made the society a present of the bridge work.

Dr. Wm. T. La Roche exhibited the models of a complicated case of irregularity, involving both the upper and lower jaws.

Dr. J. B. Lawrence exhibited the new Diehl electric motor, and a new cement, the powder of which is composed of the oxides of zinc, tin and aluminum, and the fluid is a solution of phosphoric acid.

Dr. Oliver exhibited the Cogswell disk carrier and guard.

A gentleman distributed some samples of a new disinfectant, called "Omico," which may be used in cases to which the well-known Listerine is applicable.

Dr. J. L. Williams exhibited a new form of plain tooth, applicable for single crowns, as well as bridge and plate work.

Dr. C. F. W. Bodecker presented a lady with a swelling of the left side of the lower jaw. This enlargement was not constant. It occupied a position under the roots of the third molar, which, some years ago, was extracted. The first and second molars were filled with oxyphosphate of zinc, and their pulps apparently in a healthy condition; and, as Dr. B. was unable to find the seat of the trouble, Dr. L. Waldstein, a physician, was consulted, who pronounced it to be caused by a disturbance in the circulation, brought about by a displacement and chronic inflammation of the uterus. Dr. Wm. H. Atkinson, who saw the patient this afternoon, agreed with the diagnosis, and added that in the place where the third molar had been extracted the blood vessels had become varicosed. The treatment advised was manipulation and applications of iodine.

In this patient's mouth there was also present a very large gold filling, occupying the whole of the lingual cusp, from the gum downward, of the left upper first bicuspid, which had been done by Dr. Bodecker, principally by the Herbst method. The filling was pronounced by those who examined it, Drs. Wm. H. Atkinson and E. P. Brown included, to be perfect in every respect.

Dr. C. F. W. Bodecker showed a piece of steel tape measure, upon which the figures and the lines dividing the inches and their fractions are somewhat elevated. This steel tape measure, which

*Dr. Land is writing an article on this subject, which will be published in the *INDEPENDENT PRACTITIONER*.

was very thin, was highly recommended for burnishing the edges of proximate gold fillings, drawing it, in polishing, from one side to the other like a piece of emery paper.

The Secretary, Dr. Nash, presented to the society a plaster model of a large osseous tumor sent to the Society by Dr. Genese, of Baltimore; also a brief paper giving a description of the case, and its treatment. A man about twenty-seven years of age entered the Baltimore Hospital with a large swelling on the right side of his face, the result of a blow from the handle of a windlass, some thirteen years before. He was in good health, and the swelling gave no pain, yet it was unsightly, and he wished it removed. Dr. Genese was sent for by Dr. Billings, the surgeon in charge, for consultation, and the tumor was diagnosed non-malignant. It extended from the external plate of the superior maxilla, involving the malar and zygomatic portions. It was deemed unsafe to administer an anæsthetic, for fear of hemorrhage and possible strangulation from flow of blood. To avoid a scar it was decided to operate wholly within the mouth. The cheek was distended, the periosteum dissected from the tumor and held away with forceps. An incision was made along the border of the tumor, and this followed with an inverted cone bur in the dental engine, to make a channel. Then with knife edge and chain saw the entire growth was removed in three sections. The rough edges were burred off and its surface covered with the periosteum. The roots of the teeth were left with a thin covering of bone, the mouth cleaned and the lesion dressed with tannin, glycerine and iodoform. "Nervine Vita" was applied before and during the operation to prevent pain and check the hemorrhage, which proved successful for each purpose, although a five per cent solution of the oleate of cocaine was tried without effect. The patient made a good recovery, showing only a slight enlargement of the zygomatic aspect of the arch.

Under incidents of office practice, Dr. W. H. Dwinelle exhibited several casts representing cases of enamel erosion. From his success in treating these cases he would say a word of encouragement to others who might have to deal with similar ones. Such cases seem at times to come in groups; to pour in upon us. Dr. Darby's recent paper left us at sea regarding the causes and the cure of erosion; but here were cases fully diagnosed, with remedies pronounced. One cast represented teeth in the mouth of a lady,

showing much erosion, the decalcification extending nearly through to the dentine. He polished the surfaces smooth, and although three years have since passed, the teeth then treated have remained perfect. Dr. Dwinelle alluded to experiments made by the late Dr. Westcott, of Syracuse, who subjected teeth to various tests with very interesting results. Dr. Westcott found that acids of an astringent nature, as from some fruits, were ready solvents of enamel. Dr. Dwinelle referred to a lady with incisors exceedingly sensitive and badly eroded, occasioned by partaking freely of grapes. He cut away and polished the rough surfaces, and in some places even entirely through the enamel, and so arrested the trouble.

Dr. C. E. Francis reported a case where the superior central incisors were much eroded. They had become so within six months, and their roughened condition was due to eating bountifully of grapes and grape fruit. She had been in the habit of pressing the fruit against her teeth to extract the juices and pulps. Dr. Francis also mentioned a case of serious and extensive erosion in the mouth of a young lady who had recently recovered from typhoid fever. Her teeth all around, which a few months before seemed almost perfect, were now very rough and pitted. He had decided to polish their surfaces in the manner indicated by Dr. Dwinelle. He mentioned another case where, many years ago, a lad was brought to him whose teeth were riddled with enamel pits and serrations, the result of scarlet fever during childhood. As the engine was not then in use, he trimmed the surfaces with chisels and files, then polished with points of stone. This secured their preservation.

Dr. Francis spoke of a gentleman who came to him two-and-a-half years ago, whose teeth were coated with dark stains and loaded with festoons of salivary calculus. His gums were purple, swollen and ready to bleed at the slightest touch, and the teeth so sore as to be of no use whatever for masticating. The extraneous collections were removed, the teeth polished and the gums treated until they presented a healthy appearance, and the teeth restored to usefulness. The patient was admonished that if he again neglected his teeth the same trouble would reappear and he might lose them. Last summer (nearly two years after) he again presented himself for treatment. The mouth was in a worse condition even than at his first visit, but was again put in as good order as possi-

ble. Yesterday brought the patient once more, and the appearance of his teeth and gums worse than ever. The salivary calculus had collected in such masses as almost to suggest the use of a plow to work it off. The inferior incisors were so loose that they could be removed with the fingers.

Another case was that of a lady who was warned by Dr. Francis, some eighteen years ago, that if she did not take better care of her teeth she would certainly lose them. They were loaded with accumulations and her gums much inflamed. She informed him that her former dentist (who had since died) had given her a similar warning some time before, and predicted that in ten years she would be toothless. Dr. Francis did all in his power, both by personal effort and by advising a plan for her to pursue, to aid her in efforts to preserve her teeth. She called at intervals, but each time found her gums as bad as before, and finally several of the teeth became so loose as to fall out. A few of them decayed, but the patient would not have them filled. A few days since one of these gave her much pain, and she applied to a dentist near at hand for relief. This fellow, on looking into her mouth, at once declared that her teeth had been allowed to go to ruin through the neglect of her dentist! Furthermore, he told her that *he* could have saved her teeth, and could do so yet. He made an application to the aching tooth, but without affording the slightest relief, so the lady went to Dr. Hasbrouks, took gas and had it extracted. Dr. Francis brought the tooth to the meeting, and it was passed around the room for examination. It was badly decayed; indeed, the dentine was nearly all gone, and the enamel half destroyed by decalcification. Calcareous deposits also had worked their way over the surface of the root, extending on one side quite to the apex. Dr. Francis desired to know if other dentists had similar experiences, and if any one believed that a tooth in the condition of the one presented could be saved.

Dr. J. L. Williams, of Philadelphia, presented new systems of crown and bridgework, inventions of his own, and apparently of much merit. Dr. Williams referred to the annoyance and injury incident to wearing partial dentures, especially where but a single tooth was wanted. He stated that a few in the profession had avoided the use of a plate in some cases where bicuspid and molars had become lost, by soldering a backing to an ordinary plate

tooth and allowing projections to extend into cavities of the adjoining teeth, and secured by fillings. But although in some instances these seemed to give a degree of satisfaction, they could hardly withstand the severe strain caused by the ordinary process of mastication. Dr. Williams' newly designed teeth contain four strong platinum pins, two on each end, embedded well into the body of the tooth, and so diverging at the point where they enter as to give the greatest possible strength. These projecting pins may be bent in any direction to conform to cavities in adjoining teeth, or may be soldered to form a loop.

Dr. Williams called attention to a second device where the same principle is applied to incisors. He also referred to yet another device, which he feels sure will revolutionize the present methods of constructing bridge-work, and obviate the objections to this style of work, as at present constructed. The teeth have no pins, but a groove extends across the longest diameter on two sides of each. They are so arranged that the backing will not show from the front. A backing of platinum is fitted to each groove, also a little staple attached to it and soldered to the bridge. Teeth thus made are stronger than those now in use, and less likely to give out. If, however, they happen to break, new ones of the same pattern can easily be fastened to the bridge by cement of oxy-phosphate of zinc. Cases where these teeth are used present a better appearance, and a saving of time and expense in their construction. Dr. Williams claims that the system first presented is original in every feature, and is no infringement on the rights or claims of any one. He therefore presented the model, with all the rights and privileges pertaining to the use of such work, to the First District Society of New York, and through this society to the profession.

Upon motion of Dr. Bodecker, the thanks of the society were tendered to Dr. Williams in a most enthusiastic manner.

Prof. Frank Abbott read a paper on "Pulpless Teeth."

He believed that no operations in the practice of our specialty were attended with greater anxiety, or required a more thorough knowledge of remedial agents than in the treatment of pulpless teeth; but as every dentist has his own particular ideas and methods when treating such teeth, he would simply give his individual views concerning them, and state his methods of dealing with them. Dividing his subject into four sections, he proposed to con-

sider them in order. First, he would speak of the treatment of pulpless deciduous teeth, which he asserted were always attended to with more or less uncertainty, and this in great part was due to the fact that by the time the decay extended to their pulps the roots had become absorbed, and their jagged edges were a source of constant irritation. The first step in treatment of these (and all pulpless teeth) is to thoroughly cleanse them from all the debris of the dead pulp, using warm salt water with alcohol, a weak solution of carbolic acid in water, listerine diluted with water, or any other non-irritant of a similar nature. Where a deodorizer is required he suggested permanganate of potash, three grains to one ounce of water. After this he would force a spray of some germ-destroying antiseptic into the cavity. He then drills a small opening through the side of the tooth, to enter beneath the edge of the gum and extend to the pulp chamber, for a permanent vent. A thin platinum cap is fitted to the bottom of the cavity, and over this a filling is placed. The opening drilled through should be kept clear. Dr. Abbott would not attempt to fill root canals of deciduous teeth, fearing that such fillings would keep up constant irritation to the surrounding tissue. The opening from the pulp-chamber gives exit to any possible exudation, and also affords an opportunity for cleansing or medicating if needed. Where such treatment is followed, swollen face will be avoided.

Next in the order considered were pulpless permanent teeth, and these also should be well cleansed. Some of the roots of these teeth are so tortuous and contracted as to render the entire removal of dead pulps an impossibility. The successful treatment of cases of this sort depends much on the condition, whether septic or antiseptic, of whatever portions of the pulp there may be left. Dr. Abbott warned dentists against using drills for enlarging pulp canals, as they are apt to pierce through to the alveolus, and he exhibited several specimens, showing how such mischief had been done. After cleansing as thoroughly as conditions permit, he would use the same remedial agents as for deciduous teeth, or a $\frac{1}{2000}$ solution of bi-chloride of mercury. Then a pellet of medicated cotton is packed into the cavity and sealed with gutta-percha and wax. This is removed in two or three days, and the spraying and antiseptic repeated, and kept up at like intervals for about a fortnight. If no trouble has then occurred he would fill as follows: A small

bit of cotton is carried to the end of the root and packed lightly, and covered with a soft paste of oxy-chloride of zinc. This is done where roots are entirely pulpless, but where any portion of a pulp remains, a small pellet of cotton is saturated with a mixture of oxy-chloride of zinc and placed loosely in the root. This is covered with gutta-percha gently pressed against it, which forces the zinc paste into every part. If pain is thus caused, the pressure must be stopped at once and the pain allowed to subside. When comfortable, the gutta-percha is removed and a filling introduced to complete the operation.

In cases where the pulp is living in one or more roots, it should be carefully treated and capped, but if any are dead they should be treated as already described.

Where an abscess is discharging through a fistulous opening in the gum, the tooth should be cleansed and a solution of chlor. zinc, 40 grains to 1 oz. water, forced into the root canals until it works through the fistula; then the canals are filled with oxy-chlor. of zinc. This can be done at one sitting, because the anti-septics have had their effect and the chloride of zinc readily destroys the pyogenic membrane which forms the pus sack. Granulation will follow, and the irritation that any subsequent operation might cause would be avoided. After operations on dead teeth the gums around them should be painted with a mixture of equal parts of tinct. aconite rad. and tinct iodine, except in cases of abscess, to prevent or relieve pericementitis.

If the tooth and roots are filled and the pain and swelling cannot be relieved by such applications, a hot raisin can be applied. A plump raisin split open, and the seeds removed, should be dipped in hot water and placed fruit side against the gum. This can be repeated every half hour for several hours, and one left there over night. The relief this gives is, in some instances, beyond comprehension.

Dr. Francis—Complimented Dr. Abbott's paper as embodying good practical sound sense. Referring to the application of heated raisins, Dr. Francis stated that within a few days he was sent for to see a lady with a painfully swelled cheek, caused by a devitalized inferior molar. The tooth contained a large contour filling, and the patient informed him that the roots were also filled. The gum was also much swollen, and the tooth too sore to bear the slightest touch. He advised cold applications to be kept on her

cheek, and half of a roasted raisin to be placed against the gum. This at intervals was changed for fresh ones, and a saline cathartic administered. The inflammation soon became reduced, and a slight discharge of pus appeared through the gum. In two days the patient was well as before.

Dr. F. Y. Clark—Said that one important point was omitted in Dr. Abbott's paper, viz., the difficulty of treating with success cases where there was no fistulous opening. In treating root canals there is danger of forcing more or less debris through the foramina. He thinks it unsafe to put nerve instruments into roots. He would syringe thoroughly, inject disinfectants, alcohol or ether, and seal the cavity to remain twenty-four hours before filling. The careless use of broaches causes choking at the ends of the roots.

Dr. Spooner—Claims that such cases as were mentioned by Dr. Francis and others come within the province of the dentist to treat. Where teeth are covered with stains or tartar they should be cleansed. Many such troubles are due to a disordered condition of the stomach, and the abuse of this organ is the cause of other ills and defects. Food fermentations are productive of great injury to the teeth.

Dr. Weld—Considered the paper read by Dr. Abbott able and comprehensive. Of all subjects connected with our specialty none are more important than those referred to. Many devitalized teeth, if well treated, are tolerated in the mouth, and are useful for years, but although some may give little or no seeming trouble, cases of neuralgia may at any time be expected where dead teeth are present. He spoke of a call from a lady suffering pain produced by a superior molar, which, a year previously, had been treated by an able dentist. Getting little or no benefit, she called upon another dentist with no better result. Then she called upon the speaker, who treated and filled it carefully, but it gave her further trouble, and she called on another dentist and had it extracted. Dr. Weld referred also to another case, where a troublesome lateral incisor was removed, and upon examination the root canal was found to contain half dead pulp and half filling. He concluded by saying that in the treatment of devitalized teeth we have sometimes our successes, and sometimes our failures.

Dr. Atkinson—Made some remarks not very complimentary to the paper presented, nor to those who had discussed it. He, however,

commended Dr. Spooner for asserting that the stomach had much to do in causing tooth trouble. Dr. Atkinson thinks we follow too much the advice of our patients, and, therefore, do not treat them as we ought. Many individuals have dead teeth that give no trouble. We can learn much by the mistakes of ourselves and others.

NEW YORK ODONTOLOGICAL SOCIETY.

REPORTED EXPRESSLY FOR THE INDEPENDENT PRACTITIONER.

The parlors of the New York Academy of Medicine were crowded Tuesday evening, February the 9th, it being the regular monthly meeting of the New York Odontological Society. The usual number was largely added to by members of the profession from Boston, Philadelphia, Chicago and other cities, making the meeting one of unusual interest.

Dr. J. Morgan Howe called the meeting to order and appointed a committee to escort the newly-elected president, Dr. Bogue, to the chair.

Dr. Bogue read a short address, stating the influence which the society exerted, not only throughout our own country, but abroad, and expressed his hopes and belief that it would be still more active.

Dr. Griffin, a physician from a New York hospital, presented a patient, a man about twenty-five years of age, with "a tooth in his nose." A right central incisor had taken an erratic course in process of development, the coronal portion finding its way into the right nostril, which had become much dilated by the disturbing influence of the annoying intruder, while the apex of the root appeared at a point where the crown should have been, just projecting through the gum. The doctor stated that Dr. Alexander Mott, Sr., had performed an operation in the patient's mouth when a child, and he imagined that the tooth germ was disturbed at that time, hence its eruption in the position found.

Dr. Raymond showed a storage battery and electric headlight for making examinations, or treating the mouth in the evening, or on dark days. This consisted of a little electric disk attached to a wire frame which was placed on the head like spectacles, the disk of light being on the forehead, thus leaving both hands free.

Dr. Brophy, of Chicago, presented a mouth mirror with lens

attached, which could be moved at almost any angle, thus focusing the light on the point being operated upon.

Dr. Northrop passed around some surgeon's lint, which he stated had been given him by Dr. Delos Palmer, who used it for its excellent absorbent properties.

Dr. J. Morgan Howe presented some matrices from England.

Dr. S. G. Perry explained his new hand-piece for the Bonwill engine. To reduce the friction he employed a fine fish-line in place of the cable in general use, and to prevent slipping, the edge of the large (or fly) wheel was covered with a strip of thin rubber dam, as suggested by Dr. Wardwell.

Dr. W. W. Allport, of Chicago, called the attention of the society to some matrices designed by Dr. Mattison, to be used in putting in amalgam fillings.

Dr. Niles, of Boston, stated he had a case of congenital cleft palate, in a very young patient, which, he thought, might be reduced by continual lateral pressure, and asked Dr. Kingsley if such treatment had ever been resorted to.

Dr. Kingsley replied that it had, by Dr. Sayre, fifteen minutes after the child came into the world. Though a very difficult operation, Dr. Kingsley thought that if sewed up at a very early age nature would so assist as in time to give a very good result. As to the lateral pressure, he thought this, if applied, would very much contract the arch.

The regular paper of the meeting was read by Prof. T. W. Brophy, of Chicago, upon the use of the matrix in filling teeth. He advocated their employment because it obviated the necessity for removing so much of the cervical portion of the tooth in the preparation of the cavity. Retaining pits, which so often endanger the vitality of the tooth, are not required, and the base of the cavity can be left smooth and even, thus avoiding the danger from friable walls left for the purpose of retaining the filling. The anchorage can be made upon the surface where there is no danger of leakage.

Concerning the materials with which to fill teeth, he stated that the difference between cohesive and non-cohesive gold consisted in a film of some substance which prevents the cohesion of each piece to the preceding one. When he desires to use soft gold, he places it in a drawer and subjects the pellets to the fumes arising from a

few drops of ammonia. This renders it soft and velvety, and prevents its too ready cohesion. If such gold be annealed the ammonia is driven off, and it becomes again cohesive. Of tin, he believes that its efficiency is not due to any antiseptic qualities which it may possess, but to its softness and the readiness with which it may be brought into adaptation with the walls of the cavity.

He recommended the use of a combination of tin and gold, and quoted from the article by Prof. Miller in the *INDEPENDENT PRACTITIONER* for August, 1884, concerning its admirable properties. It is readily inserted, works with extreme softness, and it seems a most excellent material for the preservation of teeth. After insertion a crystallization takes place, which makes the filling nearly or quite as hard as an amalgam one, and gives an excellent wearing surface.

He believes that the great advances made in operative dentistry in late years are due more to the rubber dam and the matrix than to any other appliances at our disposal. The credit for the introduction of the matrix is due to Dr. Louis Jack, of Philadelphia. Many operators have failed in obtaining the best results from it through a want of familiarity in its manipulation. He himself had abandoned its use once because he had failed with it to obtain perfect margins, but his failure was due to his incomplete knowledge of Dr. Jack's methods. But where there were no proximate teeth, he had found that it consumed too much time to make vulcanized rubber appliances, as recommended by Dr. Jack, and this had led him to the making of experiments for the purpose of securing something more easily adjustable, and which should secure the same ends as the appliances which must be specially made for each case. The matrix which he has finally designed, is in the form of a band made of thin spring-tempered steel, and which is therefore easily adapted to the irregular form of any tooth upon which it may be placed. The band is doubled, or made thicker upon one side, and this is penetrated by a screw, the blunt point of which rests against either the buccal or lingual wall of the tooth, and when it is set up by a watch-key, which fits the projecting end of the screw, the band is firmly fixed in place and assumes the natural contour of the tooth, thus enabling the missing walls to be restored exactly. They are specially adapted to the molar and bicuspid teeth upon the approximal surfaces. The band is so thin that it is readily inserted

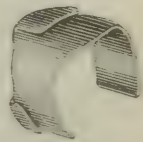
between teeth that may be in close proximity, and thus the time and annoyance so frequently attending the wedging of posterior teeth is saved the patient and operator. In the upper teeth the screw should be set on the buccal surface, while in the lower teeth it should be placed against the lingual wall, as these surfaces approach more nearly to the perpendicular, and there is, therefore, less danger of slipping.

In filling approximal cavities, which dip deep down under the gum, it is often difficult to keep the rubber dam in position. For these cases he has devised an annex to the band matrix, which consists of a separate piece of the thin steel folded upon itself and slipped upon the inferior edge of the matrix. After the matrix is approximately in position this is crowded down over the depression of the cavity, carrying with it the rubber-dam. The screw is then tightened and the whole thus retained in position.

When a considerable portion of the buccal or lingual wall has been lost, the thin matrix will sometimes draw into the cavity when the screw is set up. In these cases Dr. Brophy uses another annex made of German silver bent to the shape of the tooth, set within the matrix and held firmly in position when the screw is set up. The lower edge of the annex may be turned outward, so that it will be readily crowded down into position by the matrix.

When the rubber-dam and matrix are in position, the filling of cavities which involve one or more of the walls of a tooth is very much simplified. He commences with a large pellet of soft gold, or of tin and gold, and carries it between the matrix and the cervical wall of the tooth. It is thus held firmly in position until it is thoroughly malleted home, and the cervical edge thus made secure. Another piece is added and the cavity thus partially filled, when cohesive gold is used to give a firmer and harder masticating surface. He finishes the whole with No. 60 cohesive gold. For the insertion of the soft, or non-cohesive gold, he uses a wedge-shaped plugger that was first presented to his notice by Dr. Benjamin Lord, and this he considers the most valuable instrument for the manipulation of soft gold, or gold and tin, that has yet been devised. This plugger has deep serrations upon the point and on each side.

The band matrix will yield sufficiently to allow for a little over-



Dr. Brophy's
Band Matrix
and Annex.

lapping of the walls of the cavity, and by loosening the screw this may be increased to any extent.

Dr. Brophy believes that soft, or non-cohesive gold, is preferable for the cervical walls of cavities and for the first half of all fillings, because of its more perfect adaptation. Gold and tin, in consequence of its ease of manipulation and excellent adaptability, form an excellent material with which to fill the base of large approximal cavities in posterior teeth.

The band matrix is very simple, and by its use and that of the different annexes, many cavities, which have hitherto presented extreme difficulties in their successful filling, are reduced to simple ones, and the operation is made much less formidable, while the results in his hands have been far better than under the old method.

Dr. Dwinelle—Stated that he had, years ago, used a kind of matrix in filling approximal cavities, but was glad to have the employment of the matrix reduced to a system, and he thanked Dr. Brophy for this design.

Dr. Perry—Used a very narrow matrix of phosphor-bronze at the cervical wall, to be held in position by his separators. He does not care to use them very wide, as he is not sure of getting the filling perfect at the walls. The doctor thinks where the matrix is employed extra care must be used in filling. He also exhibited to the society a very neat and effective matrix designed by his associate, Dr. Woodward.

Dr. Clowes—Wished to call the society's attention to two cases, which he had not the opportunity of doing earlier in the evening under the head of "Incidents of Office Practice." First, a young lady twenty-one years of age, with an extremely handsome set of teeth, the result of "oral gardening" was taken sick, and remained so for three weeks. On recovery the teeth were greatly pitted, and presented soft white spots. These were carefully cut out and filled with gold. At the expiration of six months the edges of the fillings showed softening, and these spots were cut out, where required, and gold added. In another six months the same condition reoccurred, when the gold was taken out and the teeth filled with oxy-phosphate. This, in a short time, washed out, and as a last resort the fillings were again removed and the cavities filled with amalgam, since which no white or softened spots have appeared.

Case second was a lady fifty years of age, with the cutting edges

of her teeth filled with gold. These were imperfect, and being anxious to save the teeth at any cost, she was advised that they be cut out and filled with amalgam. Though probably causing criticism for placing amalgam in such a position in the front teeth, the doctor stated it as his belief that this only would save the teeth. The operation was performed, and the result is all that could be desired, and the patient well pleased.

Dr. Andrews—Of Cambridge, Mass., was greatly interested in the paper of the evening. He had used as a matrix thin strips of copper bound to the tooth by floss silk, after the rubber dam had been adjusted. Some of these strips he had silver plated, thus acting as a reflector of light.

Dr. S. B. Palmer—Of Syracuse, thought in using gold and tin combined as a filling, great care should be taken in its preparation. He thought the metals should be folded, and not used in a rope, as when introduced into a cavity if a thick layer of each be placed intermediate, the filling became in time pitted or roughened, while when folded in thin alternate sheets, there was some chemical action which took place, and in time it made a solid and lasting filling.

Dr. Brockway—Referring to filling with the matrix, stated that he often put amalgam at the cervical wall and then filled with gold.

THE ANNUAL DINNER OF THE SOCIETY.

The banquet hall of the Brunswick Hotel, Fifth Avenue, New York City, was the scene of the annual dinner on the evening of February 10th. The menu was an excellent one, and the display of flowers and other table ornaments very beautiful.

Among the invited guests who were not able to be present may be mentioned ex-President Arthur, ex-Govs. Hoffman and Cornell, Hon. Carl Schurz, Rev. Henry Ward Beecher, Oliver Wendell Holmes and many others.

The after-dinner speaking was opened briefly by Dr. Bogue, the president, who welcomed the guests, indulging in a few witty personal allusions, and said that the guests of the society had demonstrated the good quality of the dentists' work by the facility with which they had demolished the good things on the menu. Dr. N. W. Kingsley was then introduced as toastmaster of the evening. Dr. Kingsley was not prepared with any formal toast list, and began reading several letters of regret from those who had been invited but could not come.

Dr. Oliver Wendell Holmes wrote: "I often think of the forlorn condition of some of the great personages of history in the days when there were no dentists, or none who would be recognized as such by the dental artists of to-day. I think of poor King David, a worn-out man at seventy, probably without teeth and certainly without spectacles. Think of poor George Washington, his teeth always ready to drop like a portcullis and cut a sentence in two. See him in Stuart's admirable portrait, his thoughts evidently divided between the cares of empire and the maintenance of *status in quo* of his terrific dental arrangements. Think of Walter Savage Landor's melancholy complaint that he did not mind losing his intellectual faculties, but the loss of his teeth he felt to be a very great calamity. I will propose, then, the dental profession, and this association as its worthy representative. It has established and prolonged the reign of beauty; it has added to the charms of social intercourse and lent perfection to the accents of eloquence; it has taken from old age its most unwelcome feature, and lengthened enjoyable human life far beyond the limit of the years when the toothless and poor blind patriarch might well exclaim, 'I have no pleasure in them.'"

Another letter of regret was received from Henry Ward Beecher, but Dr. K. thought he would have to be allowed some time to spell it out; Mayor Grace, Gov. Hoffman, Hon. Hamilton Fish, Judge Daly, Gen. Stewart Woodford, John Bigelow, T. Gaillard Thomas, Dr. Elisha Tucker, and Dr. McDonald of the Ward's Island Insane Asylum, also sent expressions of regret at their inability to be present.

The toast of the evening was "The Odontological Society." Dr. J. Smith Dodge, Jr., of New York, responded, saying that "the keynote of these festivities was to be found in the proceedings of the regular meeting of the evening before." Dr. Dodge made an eloquent plea for dentistry as a high calling, and closed with an admirable peroration.

Gen. Horace Porter, formerly of Gen. Grant's staff, was introduced as a "son-of-a-gun" from New York, and asked to tell what he knew of dentistry from the patient's standpoint. He made one of his characteristic after-dinner speeches, full of points and puns, and said it was the first time that he had fallen into the hands of dentists and found his mouth in condition for speech-making. He said, referring to Dr. Bogue, "He has treated me for a long time, not from motives of pure friendship, but, as they say in tariff discussions, for purposes of

revenue only. Of late years I have never heard his name mentioned without feeling for my teeth to see if they were all there."

Rev. Dr. Howard Crosby, of New York, said he and most patients would pronounce the name of the Society as the "Oh-don't-ological," but he would inveigh against the snobbery which would rank above a dentist the man who did nothing useful in the world.

Prof. Garrettson, Dr. Wm. H. Atkinson, and the Rev. Dr. A. F. Beard, of Paris, followed with timely speeches.

Rev. Dr. Beard, of Paris, said that without teeth there was little enjoyment. Also, that a good dentist must in every respect be a gentleman, and in his practice gentleness and skill should be combined. Men of coarsenature are not fit for such duties, and cannot succeed. The superiority of American dentists is recognized all over the world, and those who have gone from this country have achieved reputations abroad. Their ability is acknowledged, and they are consulted and conferred with. Dentists alleviate pain and give comfort to thousands.

Allusion was made by the chairman to the illness of Dr. Dwinelle during the season of the annual dinner last year, and after congratulating the doctor on his recovery and his ability to be present on this occasion, the speaker proposed to drink to the health of Dr. Dwinelle.

Dr. Dwinelle thanked the gentlemen present in a most feeling manner for their sympathy, etc., so kindly expressed.

Dr. L. D. Shepard expressed his gratification in listening to remarks of previous speakers. He considers dentists, if true to their calling, peers in any walk of life. They give artistic beauty to deformed faces, and administer much to the health and physical well-being of man.

Dr. Kingsbury had long looked upon the Odontological Society as a teacher. He also was a teacher, and one of the founders of Philadelphia College. Dr. K. referred to the unusual mortality of prominent men of our profession, paying a tribute to the memories of Drs. Barnum and Riggs. He also spoke of the late Dr. Horace Wells as the discoverer of anasthesia, and that through him Dr. K. had become a dentist. He felt it pleasant to be here and away from his office, stating also that dentists are too much confined, get into sedentary habits and have too much nervous excitement.

They should take exercise and enjoy life. He recommended angling in particular, and recited two poems descriptive of such sport.

Dr. Crouse visited New York, partly to see the New York dentists in their offices. He desired to know something of their methods, their instruments and appliances. He had called on a number, and he intended to call on many others. He finds that New York dentists make a display of wealth, but Chicago dentists pay their debts and make less show. He finds New York a very muddy city, yet he suggested the idea of annexing it to Chicago. In Chicago they have snow instead of mud, and for pastime or recreation they throw snow balls, so do not find it necessary to go fishing for sport.

The company rose from the table at 12.30 A. M., and the festivities came to an end.

Editorial.

A QUESTION OF PROPRIETY.

There seems to be a misunderstanding of the common ethics of journalism by some contributors. An address, an essay or an article has a distinct value, and its ownership must be vested in some one. Until otherwise disposed of this rests with the author, but when by purchase or free gift he has conveyed it to another, it is as clearly the property of the devisee as would be any other possession. If it be conveyed to a professional or other journal the original author has no longer control of it, but it is absolutely the property of that journal, and its surreptitious acquirement and use by another is not justified by any rule of right.

An article cannot be published as "original" by but one journal, unless there is a clearly understood partnership in its publication between two or more. If an article be conveyed to one journal as "original," and the author at the same time sends copies to other journals without giving the first one due notice, he has violated all the rules of journalistic and common honesty, for he has sold the same property to two or more people. It matters not whether there be a money consideration, for the expense of putting an article in type gives the publisher a monied interest in it, and the author may accept for his compensation the wide dissemination of his views.

It is a matter of common courtesy among publishers to allow the republication of an article when the proper credit to the rightful owner is given, but this is clearly a matter of courtesy, for the ownership rests with the original proprietor. It is a literary theft when an article is republished without acknowledgment of the rightful ownership. This journal seldom has occasion to republish from other journals, because it usually has sufficient matter of its own. These is a deal of borrowing from our pages, the honorable journals among our exchanges always giving the proper credit, but there are a few thieves, some at home and some abroad, with whom in due time we shall have a reckoning. When we borrow matter from another journal we shall always be careful to give proper credit.

This assertion demands an explanation of the appearance in our last month's issue of the admirable address by Dr. Geo. L. Parmele, subsequent to its publication in *The Archives of Dentistry*. The editor of this journal was present at the reading of that address, and it was there and then given to him for publication. The Secretary of the society requested that it be returned him after it was in type, that he might make an abstract of it for his minutes, and this was done. The article was crowded out of our January number, and to our astonishment it appeared in the January number of *Archives*, which did not reach our table until about the twentieth of the month, after the first form of our February number, which contained the article, was all printed. We at once wrote Dr. Parmele to know how this occurred, and were assured by him that our letter gave him the first intimation of its publication. He said that he was not ignorant of the ethics of journalism, and the publication was entirely without his knowledge or consent, and markedly contrary to his wishes. He had furnished no copy for such publication, nor had he ever made a second transcript of the article. He had given it to THE INDEPENDENT PRACTITIONER, as he had a right to do, and if another had obtained possession of it he was not a party to it. He desired that a public expression of this be given, that he might not rest under the onus of the transaction.

We do not desire to be understood as intimating that the editor of *Archives* was in any way privy to this unwarranted publication. We have reason to believe that the article was published in good faith, and without knowledge that it was the property of another journal. He probably received it from one who was supposed

to have the right to transfer it, and in that case is blameless. We write this explanatory article that neither Dr. Parmele nor the editor of *THE INDEPENDENT PRACTITIONER* may be held responsible for this breach of journalistic etiquette, but that the blame may be placed where it properly belongs. Hereafter we shall exercise a little more caution in permitting manuscript to go out of our hands before the day of publication.

DR. MILLER'S PAPER ON FERMENTATION.

We hope that all of our reflective readers will carefully study the series of papers now in course of publication by Dr. Miller. To the physiologist they are of absorbing interest, and, so far as we know, the demonstrations which he presents are entirely unique and must attract attention in advanced medical circles. It should be a matter of pride to us that an American dentist presents such a series of elaborate and conclusive experiments, and acts as a teacher to all medical men. His researches are too technical and learned for every dentist readily to follow, and they demand careful study from even the most advanced. But we can all feel a just exultation in his fame as an experimenter and observer, for his studies reflect credit upon his profession. We happen to know that some of the foremost physiologists and pathologists of America are watching his progress with absorbing interest

PREHISTORIC ART.

We have received from Dr. Van Marter the contents of the oldest Etrurian tomb yet opened in Italy, at Capadimonti, which was referred to in his article on page 59 of last month's issue. It includes a piece of ancient Etrurian dentistry one hundred years older than any before discovered, with a number of articles for personal adornment, bronzes, vases, etc. A later number will contain a full account of this very interesting and valuable archæological discovery.

CROWDED OUT.

A number of editorial articles are unavoidably left out to make room for the usual book notices. Among the postponed is the letter "To Junior Dentists," which will appear in the next number. Editorials are usually the first to go to the wall when there is a lack of space.

DONALDSON'S PULP-CANAL CLEANSERS.

For a long time we have used Donaldson's nerve-canal broaches, and have found nothing equal to them in temper and delicacy. Now he has introduced a new instrument for work in nerve canals. Very delicate, spirally cut barbs are made upon the broaches, and they may be advanced or retracted like a screw, thus avoiding the great danger of breakage, while their efficiency is increased. For the purpose intended they are the most perfect instruments that we have ever used.

UNDERWOOD SPRING WATER.

For some time we have been using Underwood Spring Water for the table, and in cases of urinary derangements. As a beverage it is superior to either Apollinaris or Congress. As a diuretic it is better than many of the numerous waters which have hitherto been recommended, because it is more mild. In its action upon the digestive apparatus it is less drastic than Hunyadi, while it is exceedingly palatable. As a diluent for Claret, when such is desired, it acts admirably as a corrective for the astringent effect upon some people. Altogether, it is the most agreeable table water that we have ever used.

BIBLIOGRAPHICAL.

NOTES ON ANÆSTHETICS, *with an appendix containing illustrative cases and engravings of Anæsthetic apparatus.* By ARTHUR S. UNDERWOOD, M. R. C. S., L. D. S., Eng. Lecturer on Dental Anatomy and Physiology, and Assistant Surgeon at the Dental Hospital, London, etc. London: Claudius Ash & Sons. 1885.

The editor of *The Journal of the British Dental Association* is not unknown upon this side of the Atlantic ocean. He is a terse and vigorous writer, and the volume here presented is not unworthy of him. In the preface he modestly disclaims consideration as an authority, and announces that to Mr. Woodhouse Brain has been submitted the manuscript, for any needed corrections.

The directness with which he approaches his subject, the absence of circumlocution and rhetorical display are characteristic of the writer, and much to be commended. When, in a work upon any scientific or professional subject, the author introduces irrelevant

matter and indulges in discussive disquisitions, the argument is clogged and the point is apt to be entirely lost. A style too much condensed is, on the other hand, apt to degenerate into dogmatism and arrogance of assertion. From both these faults the book under notice is remarkably free. In the main, the teachings will commend themselves to any intelligent man, although there are some assertions which we cannot permit to pass without question.

In speaking of Nitrous Oxide Gas, the author says :

"The risk to life is so small, that it may safely be said that, supposing a cardiac condition existed that rendered Nitrous Oxide Gas a dangerous agent, in such a case any operation, even the extraction of a tooth, *without an anæsthetic*, would be attended with still greater danger. To put the case in other words, any short operation becomes less dangerous to life when performed under gas than when the anæsthetic is not employed."

We do not think that cardiac complications so urgently contraindicate the use of Nitrous Oxide as certain conditions of blood-tension, or cerebral disturbances. The heart is not so unduly stimulated as in the administration of chloroform, but if the anæsthesia be very profound, the vaso-motor system may be seriously disturbed. Nor do we think it well to resort to the use of an anæsthetic for every trivial operation. Even the temporary suspension of the function of a great part of the nervous system is a matter of grave import, and not to be entered upon without due and adequate cause.

The author's remarks upon the administration of chloroform are very just, and the great source of danger, the administration of an atmosphere too highly charged with the vapor, is clearly pointed out.

The chapter upon the Physiology of Anæsthesia does not comport with the simple character of the remainder of the book. Fourteen pages of a work like this are scarcely sufficient to make plain the full physiological action of so powerful a class of drugs as the anæsthetics, and less than this is provokingly unsatisfactory. But its reading will stimulate a desire for further information, and thus lead to great good.

As a hand-book for students and others, Mr. Underwood's book will occupy an honorable place in our literature, and it would be better for dentistry if it could be placed in the hands of every practitioner.

LECTURES ON SYPHILIS. *Delivered at the Chicago College of Physicians and Surgeons.* By G. FRANK LYDSTON, M. D., late resident surgeon at Charity hospital, and at State Emigration Refuge and Hospital, New York City. Lecturer on Surgical Diseases of the Genito-Urinary Organs and on Venereal Diseases in the College of Physicians and Surgeons, etc., etc. Chicago: A. M. Wood & Co. 1885.

This series of lectures was originally published in the *Western Medical Reporter*, where they met with such favor as to call for the publication in a separate form. They give a plain and practical view of the nature and character of this terrible disease, and as such commend themselves to all who follow the healing art.

The book will be especially useful to dentists, for it is urgently necessary that they should be able to recognize the characteristic lesions produced by syphilis in the oral cavity. There is a possible danger of carrying infection upon instruments used for syphilitic patients, unless extreme caution be exercised, and the dentist should therefore be able, at least, readily to recognize such cases, that he may take the necessary precaution. A dental education is not supposed to include the pathology of all the general disturbances of the body, and it becomes the duty of every earnest dentist to supplement his college course by the careful study of works upon general medicine. Few subjects will prove more interesting or useful to him than a careful consideration of venereal disorders, as their complications may seriously involve his specialty. We can heartily commend this book to all in search of such information.

DIAGRAM OF PARLIAMENTARY RULES, *with a key, together with concise hints and directions for conducting the business of deliberative assemblies.* By Uriah Smith, Battle Creek, Mich. Review and Herald Publishing Association. 1885.

Every attendant upon dental associations is desirous of knowing the parliamentary rules which should govern the deliberations. The manuals of Jefferson and of Cushing have been accepted as authorities in the decision of questions of order. But unless there has been an exhaustive study of their contents, sufficient to make familiar to the mind every established rule, much time must be spent in looking up the authority. Without unduly delaying proceedings and interrupting the progress of business, this is impossible. The admirable diagram of Mr. Smith presents to the eye at once all the

rules which in parliamentary practice apply to any motion, and enables a presiding officer to decide instantly any question that may arise, with the certainty that he is correct.

CAULK'S DENTAL ANNUAL. *Number IV.* 1885-1886.

This admirable collection of dental statistics arrived too late for notice in the January number, but it is not now too late to commend it to every dentist. It contains a directory of dental societies, of dental periodicals, of dental colleges, number of dentists, of dealers in dental goods, of dental patents, transcripts of the dental laws of the different States, dental necrology, with original articles and notes that make it almost a necessity to every intelligent dentist. L. D. Caulk, Camden, Del., Publisher. Price 25 cents.

ERYTHROXYLON COCA, *and its derivatives.* A *resumé* of their history, botanical origin, production and cultivation, chemical composition, therapeutic application, physiological action and medicinal preparation. Compiled by the scientific department of Parke, Davis & Co. Detroit and New York.

Muriate of Cocaine has sprung into such universal use in medicine that some knowledge of its character is desired by every physician. In its preparation no one has reached a greater degree of perfection than the well known manufacturing chemists, Parke, Davis & Co. We have for some time been using their preparations of Cocaine, the muriate, the oleate, the salicylate, the hydrobromate, and the citrate, and always with increasing satisfaction. This pamphlet of one hundred pages is devoted to a thorough consideration of the properties and effects of cocaine in the treatment of a great variety of disorders. Its adaptation to dental practice is clearly set forth, and we heartily recommend its study to every progressive dentist. The pamphlet may be obtained of the publishers.

PRACTICAL NOTES ON THE TREATMENT OF SKIN DISEASES. *Part I. Diseases of the Perspiratory and Sebaceous Glands.* By George H. Rohe, M. D., Professor of Hygiene and Clinical Dermatology in the College of Physicians and Surgeons of Baltimore. Baltimore: 1885.

The well known author of "A Text Book of Hygiene," and former editor of *The Medical Chronicle*, needs no introduction to our readers. He is always concise, instructive and reliable. This little

book of sixty pages contains all that it is essential to know of the subjects of which it treats. It may be obtained of the author at Baltimore. Price 25 cents.

TRANSACTIONS OF THE DENTAL SOCIETY OF THE STATE OF NEW YORK. *Seventeenth Annual Meeting, 1885.*

The annual volume of this society is somewhat late in making its appearance, and is less full and complete than most of its predecessors. But it perhaps contains all that it was worth while to insert. Some of the papers are of permanent value. The work well done and the report makes a handsome volume.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA. *Thirty sixth Annual Session, at Scranton, May, 1885.*

Report of the Board of Dental Examiners of the State of California.

First Annual Report of the Minnesota State Board of Dental Examiners.

Diphtheria and its Management. Are Membraneous Croup and Diphtheria Distinct Diseases? BY JOSEPH E. WINTERS, M. D. Reprinted from *The Medical Record*.

Int Diseases. Treatment by Rest and Fixation. BY DE FOREST WILLARD, M. D. Reprinted from *The New York Medical Journal*.

Surgical Treatment of Infants. BY DE FOREST WILLARD, M. D.

Color Blindness. A paper read before the Buffalo Society of Natural Sciences. BY B. H. GROVE, A. B., M. D.

Clinical Notes on the Local Treatment of Disease. A record of practical therapeutics. Edited by Charles L. Mitchell, M. D.

Editorial Reprints from the Journal of Inebriety. By T. D. Crothers, editor.

Angioma of the Nose. BY JOHN O. ROE, M. D. Reprinted from *The New York Medical Journal*.

Tronchietasis. BY JOHN O. ROE, M. D. Reprinted from *The Buffalo Medical and Surgical Journal*.

Essay on Vulcanizing Rubber. BY FREDERICK WHEATON SEABURY, Providence, R. I.

NINTH INTERNATIONAL MEDICAL CONGRESS.

SECTION ON DENTAL AND ORAL SURGERY.

As there seems to be some misapprehension in the minds of some and earnest enquiry by others as to the status of the Section on Dental and Oral Surgery in the International Medical Congress to be held in Washington, D. C., in 1887, it seems right and proper that some statement be now made in regard to the organization and progress of the work.

It is very generally known that the Section has been established and organized. The following officers have been appointed, viz: a president, one vice-president and two secretaries.

Fourteen gentlemen of recognized ability and high professional standing from various parts of the country have accepted position upon the Council, and have pledged themselves to do all they can to make this Section a success. At the next meeting of the Executive Committee ten or twelve more names will be added to the Council, as may seem best. Much of the preliminary work in arranging the matters of the Section has been in the main accomplished.

A programme embracing the subjects of greatest interest to the profession of the world has been outlined and is now under consideration, and as soon as completed the secretaries will open correspondence with the eminent men of the profession in Europe and America relative to the work to be done. Quite a number have already indicated a desire to prepare papers, or at least to take some part in the work.

We not only expect but are assured that this Section will receive the hearty support and co-operation of dental specialists, both at home and abroad, and with such manifestations great hope is entertained that the Section will be eminently successful. We ask for it the co-operation of all who have the best interests of our profession at heart.

A circular will ere long be issued by the Executive Committee, giving status of the preparatory work for the Congress.

J. TAFT,
of Section D. O. S.

DR. R. L. ROBBINS.

At a meeting of the Trustees of the Boston Dental College, held January 6th the following resolutions were adopted, viz:

WHEREAS, God in His inscrutable wisdom has removed from a sphere of usefulness in this life, to a life hereafter, Dr. R. L. Robbins, therefore,—

Resolved, That the members of the Board of Trustees of the Boston Dental College recognize in Dr. Robbins an efficient and much devoted member of this Board from its organization to the time of his death.

Resolved, That the Trustees of the College deplore the loss of a member so prominent, useful and devoted to the best interest of the College.

Resolved, That the Trustees feel that they have not only lost a very valuable co-worker in the interest of the College, but a friend whose wise counsel was highly esteemed. His most marked characteristics were his strict integrity and conscientiousness, never admitting or tacitly acquiescing in any act tainted with dishonor.

Resolved, That the members of this Board extend their heartfelt sympathies to the bereaved family, with the assurance of their high appreciation of his long, faithful and active service for the best interest of the College.

Resolved, That these resolutions be entered upon the records of the College and a copy sent to his bereaved family.

I. AYLING,
GEO. B. HARRIMAN,
J. M. DALY,
W. P. LEAVITT,

Committee on Resolutions.

CHAS. H. OSGOOD, Secretary.

DENTAL SOCIETIES.

What the average dentist most needs is to be brought into contact with the leading and successful men of his profession; with those of whom he has often read and heard. His mind is thus led into new channels, and he gets broader views of his chosen work. The greatest benefit to be derived from dental societies is the elevating influence which they exert. They are not so much teachers of dentistry as educators in the broadest sense of the term. The ideas gained from reading alone are at best but superficial. To spur men on to a practical application of their readings we need personal contact with the men who stand as the exemplars. Then we learn that they are but human. The glamour that surrounds them when we know them only by their writings is removed, and we see that it is quite within our own power to reach their level and to practice by their standard.

R. I. PEARSON.

MENDING RUBBER DAM.

Every dentist has been more or less troubled by cutting the rubber dam after being placed in the mouth. I have a way of repairing the break which I think may be of interest to the readers of the *INDEPENDENT PRACTITIONER*.

As soon as the rubber is torn place a napkin under it to stop the flow of saliva, and wipe it dry. Moisten the surface of a piece of vulcanizable rubber with chloroform, place it over the break and hold it in position a moment, when it will be found firmly adherent. I send you a piece of dam thus mended, that withstood an operation lasting three hours.

F. A. GREENE.

This is an excellent and practicable suggestion, one that we have personally tried and approve.

A. M. D.

KANSAS STATE DENTAL ASSOCIATION.

The fifteenth annual meeting of the Kansas State Dental Association will convene at Topeka, on Tuesday, May 4th, continuing three days. This meeting will be made the most interesting and profitable one in the history of the Association. Members of the profession in other States are cordially invited to be present. Topeka is easy of access and has excellent hotel accommodations.

C. B. REED,
Secretary, Topeka, Kans.

MARRIED.

In Newport, R. I., February 3, Charles Albert Brackett, D. M. D., Professor of Dental Pathology and Therapeutics in Harvard University, and Mary Irish Spencer, of Newport.

May this new domestic hearthstone, so happily laid, prove a haven of rest and peace, and may Prof. Brackett's matrimonial bark aye sail quiet seas, wafted by none but favoring gales.

LOUISIANA STATE DENTAL SOCIETY.

This society will hold its next annual meeting in Tulane Hall, at New Orleans, March 4th, 5th and 6th, 1886. The Mardi Gras festivities, the Grand Exposition, with cheap railroad rates, should secure a large attendance. All will be welcome.

P. J. FRIEDRICHS,
Chairman Executive Committee.

PROFESSOR HUXLEY'S TABLE gives the weight of a well-proportioned man as 154 pounds, distributed as follows: Muscles, tendons, etc., 68 pounds; bony skeleton, 24 pounds; integument, $10\frac{1}{2}$ pounds; fat, 28 pounds; brain, 3 pounds; viscera of thorax, $3\frac{1}{2}$ pounds; abdominal viscera, 11 pounds; blood, 7 pounds.

Such a man should consume each day, beefsteak, 5,000 grains; bread, 6,000 grains; milk, 7,000 grains; potatoes, 3,000 grains; butter, 600 grains; water, 22,900 grains. His heart should beat 75 times per minute; he should breathe 15 times per minute. In every twenty-four hours he would vitiate 1,750 cubic feet of air to the extent of one per cent. He should throw off by the skin 18 ounces of water, 400 grains of solid matter, and 400 grains of carbonic acid every twenty-four hours, the total loss in that period of time amounting to six pounds of water and over two pounds of other matter.

THE OHIO STATE JOURNAL publishes an article bearing distinguishable ear marks, the aim of which is to combat the opinions advanced in a paper read last year before the American Dental Association, that the earthy phosphates are never directly assimilated as tissue food when administered for that purpose.

The writer is either obtuse or disingenuous. He fails to comprehend the point, or he is endeavoring to set up a man of straw for the purpose of showing how easily he can demolish it. The paper read at Minneapolis condemns the giving of earthy phosphates for *trophic* purposes, but asserts that they may, and do in some instances, act remedially. The subject was physiology, and not pathology. There is a difference between a medicine and a food.

A PLASTER CAST of a nose, or any external organ which has deep undercuts, may be made as follows: Melt paraffine in a water bath, and with a soft brush paint the tissue over, laying on the first coat very quickly. Continue to add paraffine until a coating an eighth of an inch thick is obtained. This can be separated by cutting at the necessary points, and again placing the parts in contact, when the plaster cast may be made, pouring the batter in and out two or three times, to avoid air bubbles.

CHILDREN ARE PARTICULARLY PRONE to disorders of the digestive apparatus, and the most prevalent form is indigestion, especially during the summer, owing to the extreme heat and the ingestion of food entirely unsuited to the age of the child. Very frequently, on questioning the mother as to whether she had given anything but the breast to an infant of a few months. I have been informed that she gave it a taste of meat, potato, or some other article which it is unable to assimilate. It seems entirely beyond her comprehension that she is giving a poison to the child, and is slowly starving it, from the fact that the absorbents are unable to take it up to supply the wants of the economy.—*The Polyclinic*.

APROPOS TO THE ARTICLE by Dr. Spaulding in the last number of this journal, L. D. Caulk states that for the past seven years he has sold large quantities of his cements in the German markets; that for five years the demand for his "Par Excellence Alloy," which contains a percentage of copper, has been very large in fifteen foreign countries, and that the demand for them is constantly on the increase abroad. He says that a large majority of those who use cements do not know how to mix them properly.

THE DENTAL PROFESSION may consider itself greatly indebted to Dr. J. L. Williams, of Philadelphia. He has made decided improvements in porcelain teeth for crowns and bridge work, which, at a recent meeting of the First District Dental Society, he formally presented to the profession with an unfettered privilege to use them, although the doctor has refused tempting offers for exclusive rights to his improvements, from several parties. Such magnanimity should be widely recorded.

C E. F.

THERE IS A DESIRE on the part of some to have the next session of the American Dental Association meet in San Francisco. An excellent opportunity is offered, and nominal, or certainly phenomenal, railroad rates may be secured, the same that are offered the Grand Army of the Republic, which meets on the Pacific Coast. Will all who approve of this place of meeting please address

A. M. DUDLEY, Salem, Mass.

DR. E. PARMLY BROWN says that bridge work is called new, but that it is at least 2,000 years old, a specimen from a grave in Etruria being now in existence.

Yes, and Dr. Brown gives the credit for the first presentation of the fact to the INDEPENDENT PRACTITIONER, which is more than is done by *Caulk's Annual*, from which the above was taken.

THE FIRM OF A. W. SEE & Co. has been organized to deal in dental goods. Their place of business will be 1347 Broadway, New York, and the firm will be composed of A. W. See and Mr. Fagin, recently in the employ of R. S. Williams, and E. A. Pierce, for twenty-three years with the S. S. White depot at Boston. The new firm will be the New York agents of Johnson & Lund.

THE ODONTOLOGICAL SOCIETY OF WESTERN PENNSYLVANIA will hold its next quarterly meeting at the office of Dr. J. G. Templeton, 509 Penn Ave., Pittsburgh, on Tuesday evening, March 9th.

AN AMERICAN DENTIST, located for some years in a first-class European city, desires to sell his practice and return to this country, where he wishes to spend his declining years. He has a first-class clientele, and will give to the right man exceptional chances. His address will be furnished by the editor of this journal.

DIALOGUE BETWEEN TWO PHYSICIANS.—Dr. A——. Are you in general practice, or do you confine yourself to a specialty? Dr. B——. Oh, I am a specialist. Dr. A——. And your field is—? Dr. B——. My field is bounded above by the diaphragm, and below by Poupart's ligament.

THE FIRST DISTRICT DENTAL SOCIETY, of New York numbers about ninety active members. The meetings and clinics are largely attended, and are a source of great interest. Usually from one hundred to one hundred and fifty dentists are present on these occasions. X.

DR. S. S. SOUTHWORTH, of Sacramento, Cal., formerly of Niagara Falls, N. Y., and Brockville, Ont., is one of the State Board of Dental Examiners for California.

THE BRITISH DENTAL ASSOCIATION has been in existence but six years, and has six hundred members. It is the governing body of the dentists of England.

THE MEDICAL RECORD estimates the whole number of physicians in the United States, regular and irregular, active, passive and neuter, at 120,000.

Dr. A. W. HARLAN was duly dined and wine'd by a party of his friends, at Donovan's, in New York, on his return from his European trip.

Dr. O. W. HOLMES says that charlatanism always hobbles on two crutches—the tattle of women and the certificates of clergymen.

TWENTY FIVE DEATHS occurred in London last year from hydrophobia. The average number for the preceding ten years was six.

THE MICHIGAN STATE DENTAL ASSOCIATION meets at Ann Arbor on Tuesday, March 16th, and will continue in session four days.

Dr. C. W. SPALDING, of St. Louis, is spending the winter in New Mexico, where he is engaged in mining enterprises.

Dr. S. G. STEVENS, formerly of Lynn, Mass., has removed to Boston, and opened an office at 175 Tremont Street.

WM. H. VANDERBILT's medical bequests were \$100,000 to St. Luke's Hospital, and \$50,000 to the Home for Incurables.

THE PARIS ADDRESS of Dr. G. C. Daboll, is for the present, "Care of American Exchange."

THE CHICAGO DENTAL COLLEGE has organized a Spring course of lectures.

POSTSCRIPT.—

THE AMERICAN DENTAL ASSOCIATION.

The Union Pacific Railway Company, and connecting lines, will give all members of and delegates to the American Dental Association, and their families, the same very low rates to San Francisco, that are to be given to the Grand Army the coming summer, if the Association will hold its annual session there the last week in July. These rates will be \$50, or less, for the round trip from Missouri River points, such as Omaha, Leavenworth, Kansas City, St. Joseph, etc.; about \$60 from Chicago, Cincinnati, St. Louis, etc., and \$75 or \$80 from Atlantic coast cities. Tickets will be good from July 1st, for thirty days going and eighty-five days returning, and will be accepted by any route returning. Other lines will probably give the same rates for the outward trip.

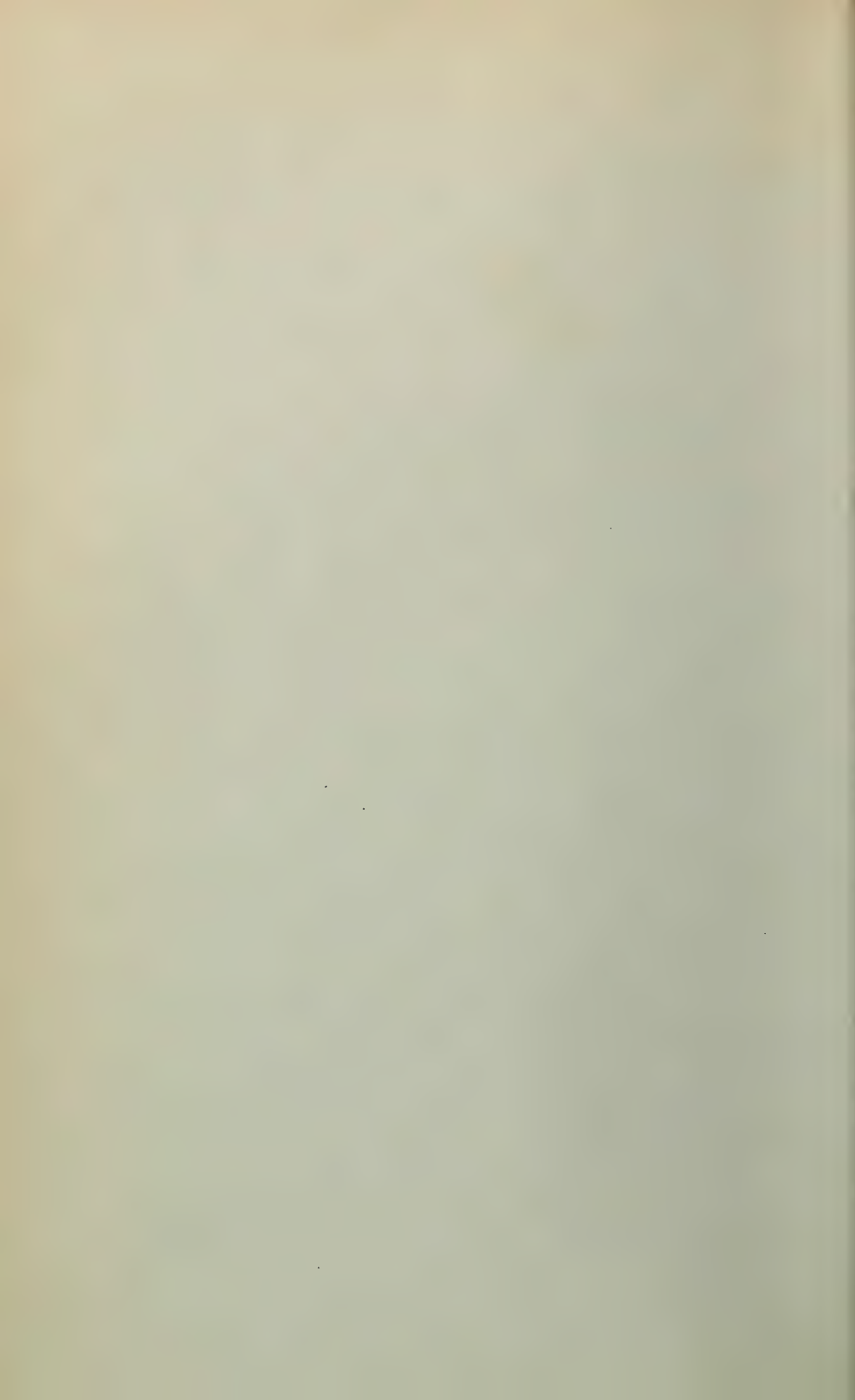
It is an opportunity to hold our meeting on the Pacific Coast that we will probably never have again. All dentists and their families desiring to attend the meeting of the Association will be given the rates and privileges as members and delegates.

The California Odontological Society has taken decided and favorable action, inviting the Society to hold its next session in San Francisco, and the dentists of the Pacific Coast stand ready to extend every hospitality and to exert themselves to the utmost to make such a meeting a grand success.

At the request of a large number of members of the Association I am requested to ascertain the wishes of members of the Association and profession in the matter. All dentists who would like to have the meeting held at San Francisco, as above, will please send their names to

A. M. DUDLEY,

Salem, Mass.



"PREVENTIVE MEDICINE."

PROPHYLACTIC, ANTISEPTIC, DISINFECTANT,
LISTERINE
NON-TOXIC, NON-IRRITANT, NON-ESCHAROTIC.

These properties added to the absolute safety of Listerine, its agreeable character and uniform strength, concentrates into this preparation every requisite of a perfect Prophylactic, and gives it undoubted superiority over all other Antiseptics, especially for internal use. The well-known therapy of the several ingredients of Listerine confirms its claims for more than merely mechanical germicidal properties.

Formula.—*LISTERINE* is the *essential Antiseptic* constituent of Thyme, Eucalyptus, Baptisia, Gaultheria and Mentha Arvensis in combination. Each *fluid drachm* also contains *two grains of refined and purified Benzo-Boracic Acid*.

Dose.—One teaspoonful *three or more* times a day (as indicated). As a local application to ulcers, wounds and abscesses, or as a gargle, mouth-wash, inhalant or injection, it can be used *ad libitum*, diluted as desired.

The universal commendation of *LISTERINE* by Physicians and Scientists of all Schools throughout the United States, after five years' thorough Clinical Experience, has fully established its value in **PHTHISIS, DYSPEPSIA, DIPHTHERIA, CATARRH, DYSENTERY, SCARLATINA, SMALL-POX, ERYSIPELAS, TYPHOID** and other **FEVERS**; and as the most grateful and pleasant disinfectant and prophylactic for **VAGINAL INJECTIONS** in **OBSTETRICS, LEUCORRŒA, GONORRŒA**, and, notably, for the hands, after Surgical and Gynæcological Operations.

This accumulated evidence of merit indicates its special adaptability to ;

DENTAL PRACTICE.

The testimony of its value in the treatment of **ORAL DISEASES**, in **Dental Practice**, is set forth in a special pamphlet on that subject to be obtained gratis on application, together with many Valuable Clinical Notes and Reprints by Eminent Surgical, Medical and Dental Authors.

Three Reprinted Lectures on **CHRONIC NASAL CATARRH**, (illustrated by forty wood cuts,) by Prof. **GEORGE M. LEFFERTS, M. D.**, New York City, are now ready for delivery, free of cost, to those who mention this Journal in making application.

LAMBERT PHARMACAL CO.,

New Office and Laboratory. - 116 Olive Street, ST. LOUIS.

HARDMAN'S WHITE ALLOY

Takes the place of gold for filling front, or any teeth.

PRICE, \$3.00 PER OZ.

Test for Color—Place a button of Amalgam, that has one surface polished, into a solution of 40 to 60 grs. of sulphuret of Pottassa in 1 oz. of water. Let remain 24 to 48 hours.

Test for Leakage—Fill a small glass test tube with it, just as you would a cavity in a tooth, and drop it into a bottle containing an alcoholic solution of red aniline.

This Alloy Stands These, and Any Other Tests Deemed Requisite to Perfection.

HARDMAN'S SUPERIOR AMALGAM

Surpasses all others for strength and density of texture. Use it for Crown Work, in Molars, &c.

PRICE REDUCED TO \$4.00 PER OZ.

Large discounts on both of these in quantities.

MADE AND FOR SALE BY

J. HARDMAN, MUSCATINE, IOWA.

If your depot does not keep them send to the proprietor for them.

8-4-AN- $\frac{1}{4}$

DIBBLE'S WHITE AMALGAM

A Gold Alloy. \$5.00 per ounce.

Manufactured only by

W. H. DIBBLE, MIDDLETOWN, CT.

For sale by S. S. WHITE DENTAL M'FG CO., or sent by mail by the manufacturer.

ALSO MANUFACTURER OF THE DIBBLE PLUGGER.

THE FOLLOWING TESTIMONIALS ARE RESPECTFULLY OFFERED.

Dibble at present is ahead on Amalgam.
NEW YORK, Jan. 9, 1883.

J. W. CLOWES, 667 Fifth Avenue.

I believe it to be the best article of the kind in use.

W. H. DWINELLE, M. D., 27 West 34th St., New York.

I take pleasure in recommending it as the best now known.

GEORGE H. PERINE, 74 West 50th St., New York.

Have used it three years, and it has given me better results than any other.

O. E. HILL, M. D. S., 160 Clinton St., Brooklyn, N. Y.

I am satisfied it is the best in use. I can recommend it to the profession.

C. E. GRAVES, 393 Jay Street, Brooklyn, N. Y.

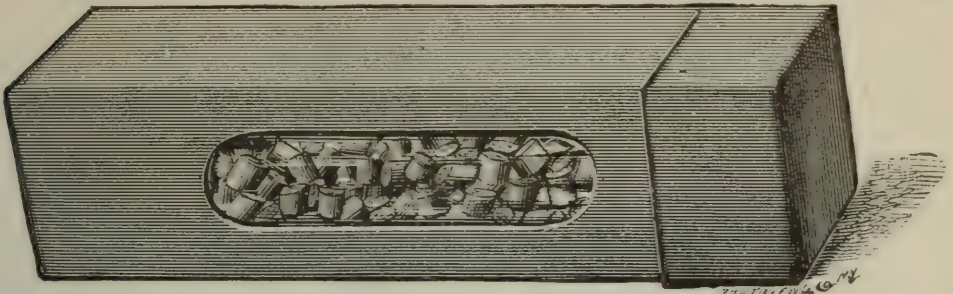
It is the best I have ever used.

MILES H. DODGE, 20 E. 33d St., New York.

\$5.00 per oz. or 3 oz. for \$12.50. Sent by Mail.

3-5-AN- $\frac{1}{2}$.

EXTRA PLIABLE DECIMAL GOLD ROLLS.



(This Engraving represents a Phial of size I of the above designated Gold, inclosed in a Box.)

Gold Foil and Gold Rolls, per 1-10 ounce,	-	-	-	\$3 00.	Per ounce,	\$28.00
Extra Pliable Decimal Gold Rolls, per 1-10 ounce,	-	-	-	3.50.	Per ½ ounce,	17.00
Untrimmed Foil, per 1-5 ounce book,	-	-	-	-	-	5.50
Ideal Cement, per package, with Pigments,	-	-	-	-	-	1.00
Rowan's Ideal Alloy, No. 1, per 1 oz. \$5.00, 2 OZS. \$9.00, 4 OZS.	-	-	-	-	-	16.00
Rowan's Ideal Alloy, No. 2, per 1 oz. \$3.00, 2 OZS. \$5.50, 4 OZS.,	-	-	-	-	-	10.00
Tin Foil (our make), very tough, per book,	-	-	-	-	-	.50

Try some of our "Ideal" Cement Filling and "Ideal" Alloy.

Appended are testimonials for our preparations of Gold from well-known gentlemen:

I have used the Rolled Gold of Edward Rowan & Co., and like it very much. I prefer high numbers—30, 60 and 120—for facility of adaptation to walls of cavities, capacity to bear high annealing and making solid work, I know, no superior make.

October 23, 1882.

271 N. Entaw Street.

GENTLEMEN—I have used nearly all of the last ounce of your "Extra Cohesive" Decimal Gold Foil No. 4, and it affords me pleasure to inform you that it has proved to be a first-class article in every respect. It is *cohesive* and *tough* in the *highest degree*, yet possessing *less harshness* than is usually found in cohesive foils. I cheerfully thus refer to it, and so long as you continue to make such foil, I want nothing better.

No. 100 Boylston Street.

Sirs—I have used your Rolled Gold for several years. When I wish to use *cohesive* gold, I prefer your No. 30 Rolled to any gold with which I am familiar. It is very tough, soft and cohesive. In short, pleasant and easy to work, and makes a compact, even and finished filling.

Yours truly, L. D. SHEPARD,

Boston, Mass., June 30, 1883.

S. H. GUILFORD, A.M., D.D.S., (*Professor of Operative and Prosthetic Dentistry Phila. Dental College.*) has permitted us to state that he uses and recommends our "Gold Rolls."

Dr. H. J. McKELLOPS, of St. Louis, writes us, under date September 16, 1884, "You may use my name in connection with your Gold with pleasure."

H. C. REGISTER, M. D., D. D. S., of Philadelphia, writes us, "You are permitted to use my name in recommending your Gold, as second to none in the world!"

CHAS. L. STEEL, M. D., D. D. S., of Richmond, Va. (*Demonstrator Operative Dentistry, University of Maryland.*) DEAR SIR—Your last ounce of Gold duly received, and, as usual, works superbly. I have used many makes of Cohesive Foil, but for some time past have confined myself to yours exclusively, as I find none other so near perfection.

A. H. FULLER, M. D., D. D. S. (*Professor of Operative Dentistry, Missouri Dental College*) Should you so desire you may state that I have been using your Gold for the past year or more, and find it first-class in every respect. Shall send you an order in a few days for more.

WM. CARR, M. D., 35 West 46th Street, New York, permits us to state that he endorses our Golds. He uses Nos. 3 and 4 soft; No. 60 Rolled; and Gold Rolls.

EDWARD ROWAN & CO.

196 Third Ave., NEW YORK.

COGSWELL'S Disk Carrier and Guard

MADE BY
CODMAN & SHURTLEFF,

167 Tremont Street,

BOSTON, MASS.

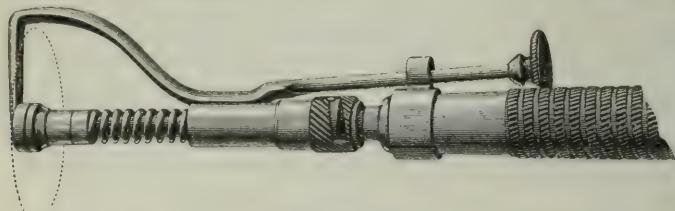


Fig. 214.

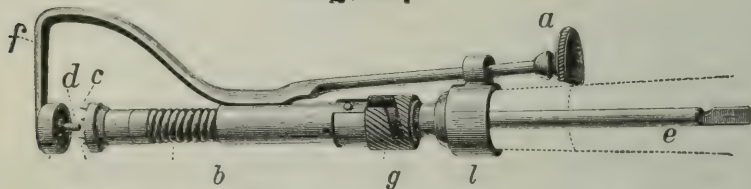


Fig. 214 A.

Patented Feb. 10, 1885.

! This invention will be found indispensable by every dentist who values time, as it will enable him to attach the much used Disk to the Engine Mandrel in a small fraction of the time required by other methods.

It is represented in the figures as connected to the Hand-piece. In Figure 214 the holding device is represented as closed, the outline of Disk being indicated by circle of broken lines. In Figure 214 A, it is shown as opened by slight pressure of the thumb or finger against the knob *a*, ready to receive the disk. Upon relaxing this pressure the spring *b* closes upon the disk, which is centered upon *d*, perforated by four hardened steel points, *cc*, and thus securely held ready for rotation. The carrier is attached to the Hand-piece by insertion of the Mandrel *e*. A friction ferule *l* overcomes slight tendency of bracket *f* to rotate, and enables the operator to retain the guard opposite that portion of the disk where it will most effectually guard cheek, tongue, or other part from injury, or, prevent interference with rubber dam. At *g* is a locking sleeve, employed only when in the use of stiff disks there is a tendency to overcome pressure of spring *b*, and permit loosening of disk.

The Carrier will receive disks of $\frac{7}{8}$ inch diameter down to $\frac{3}{8}$ or even smaller. It may be rotated in either direction without loosening the disk, as occurs with the ordinary screw-held disk.

PRICE, \$2.50.

We are prepared to supply the Disk Carrier and Guard to fit the S. S. W. Hand-pieces, Nos. 5 and 6, Hodge's and Bonwill's Improved, at this price. Other Hand-pieces, if sent us, will be fitted to order at the same price, or at a moderate additional charge. *In ordering, state what Hand-piece is used.*

MESSRS. CODMAN & SHURTLEFF:

BOSTON.

Gentlemen,—The new Disk Carrier, with guard, which I have fully tested, is very satisfactory in all respects. I prefer it to any other pattern now in the market.

ISAAC J. WETHERBEE, D. D. S., *Fres. B. D. C.*

From J. B. Coolidge, M.D., D.D.S., Professor of Clinical Dentistry, in Boston Dental College.

MESSRS. CODMAN & SHURTLEFF:—

The new Disk Carrier which you sent me is the best. It will very soon save its cost in the time required for changing the disk. The guard will be found of great use in protecting the cheek, tongue, and rubber dam from the action of the disk. I would recommend it to every Dentist.

J. B. COOLIDGE.

From J. A. Watling, D.D.S., Professor of Operative Dentistry, Michigan University.

MESSRS. CODMAN & SHURTLEFF,

167 Tremont Street, Boston, Mass.:

"*Dear Sirs,*—Your Disk Carrier received. After several careful trials, I feel justified in recommending it to the profession as a very useful and valuable addition to a dentist's outfit.

It is one of the best that I ever used. Is readily applied to the engine, and to replace the old disk with a new one requires but a few seconds.

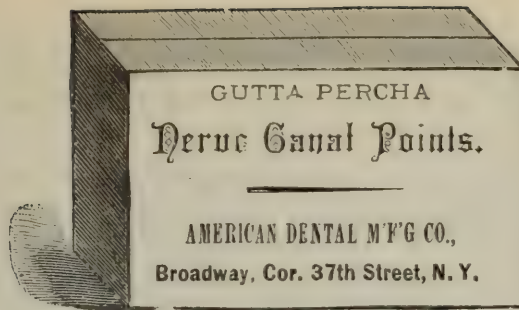
The protector, while holding the disk firmly in place and being all that is necessary for the prevention of injury to the mouth, does not shut off the view of the filling to be finished.

It is indeed an instrument to be desired by all careful practitioners.

1-6-an-1

Respectfully,

J. A. WATLING, D.D.S.

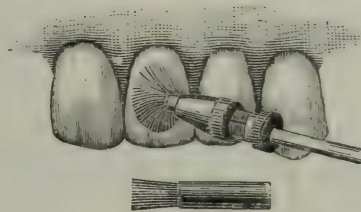


To those that have never seen or used the little Gutta-Percha Nerve Canal Points, manufactured by us for the past year and a half, we would say, that they have been well received, and extensively used by the profession generally. They are very carefully made and nicely tapered, being well adapted for the purpose for which they are intended.

The quality of Gutta-Percha from which they are made is the very best, being good and tough, permits bending in any shape, and easily worked.

PRICE PER PACKAGE OF 125 POINTS, 50 Cents.

SMALL POLISHING BRUSH.



The brush will be found very useful in cleaning teeth and finishing fillings; also in polishing the walls of cavities in preparing them for filling.

The brushes are made in three grades—soft, medium, and stiff—and adapted for use with either the Klump Port Polisher or the R. A. Port Polisher.

Price Per Dozen, - - - - - 50 Cents.

Price for R. A. Port Polisher, - - 30 Cents.

AMERICAN DENTAL MANUFACTURING COMPANY,

BROADWAY, Cor. 37th STREET,

The Prophylactic Tooth Brushes

ADULTS' AND CHILD'S SIZES.

The only Tooth Brush made that has received the unqualified endorsement of the Dental Profession.

Used as directed, it is a "preventive of disease."

Each brush in a box with full directions for use.

Made in hard, medium and soft; and when desired, extra soft.

Every Brush Warranted.

Circulars, Price, Etc., Sent on Application.

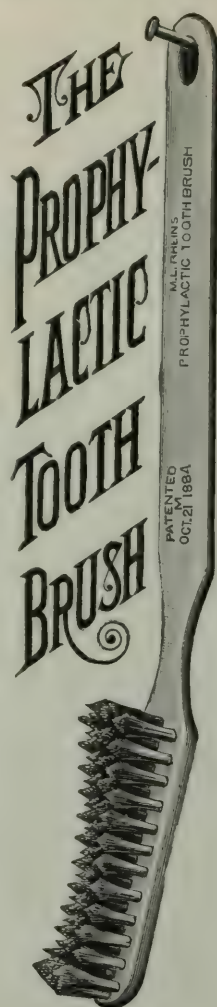
Any Dentist who has not tried this or our Dental Plate Brush, can procure a sample at the dozen price by addressing the

FLORENCE MANUFACTURING CO.,

FLORENCE, Mass.

23-25 Greene St., NEW YORK.

185-187 Dearborn St., CHICAGO, ILL.



HAS IT BEEN TRIED?



NEW ORLEANS, LA.,
AUG. 5, 1885.

I HAVE USED THE BRUSHES, BOTH THE SOFT TOOTH BRUSH AND THE PLATE BRUSH, MANUFACTURED BY THE FLORENCE MANUFACTURING COMPANY, AND THINK THAT HENCEFORTH THEY WILL PROVE A *SINE QUA NON* TO ALL WHO KNOW THEIR VALUE.

THE PROPHYLACTIC TOOTH BRUSH IS CERTAINLY A LONG STEP IN ADVANCE OF ANYTHING PRODUCED HERETOFORE, WHILE THE DENTAL PLATE BRUSH FILLS A LONG FELT WANT.

J. R. WALKER, D.D.S.

SEPT. 24, 1885.

TWO MONTHS' CONSTANT USE OF ONE OF YOUR PROPHYLACTIC BRUSHES BY MYSELF, AND OF YOUR PLATE BRUSH BY MY WIFE, CONFIRMS US IN THE OPINION THAT THEY ARE EMPHATICALLY THE VERY BEST BRUSHES EVER PUT ON THE MARKET.

J. R. WALKER, D.D.S.

WAS IT SATISFACTORY?

Send for Circulars and Testimonials.

FLORENCE MANUFACTURING Co.,
FLORENCE, MASS.

C. A. TIMME & CO. Importers of

WOLFRAB'S
PURE CHEMICALLY

GOLD-FOIL.

C.A. TIMME & CO.

IMPORTERS of DENTISTS SPECIALTIES

SOLE AGENTS FOR THE U. S.
190 HUDSON ST. HOBOKEN N. J.

Foil, \$4.00 per $\frac{1}{8}$ oz., \$15.00 per $\frac{1}{2}$ oz., \$30.00 per 1 oz.

On orders of two ounces and more at a time a reduction of 50 cents per ounce will be given.

This gold is made in reference to the HERBST method of filling teeth with the engine. It has also proven a very desirable article for the *mallet* and *hand-pressure*.

We claim it to be superior to any other make for its peculiar *softness*. It easily adapts itself to the walls of the cavity, and when properly manipulated it makes a *solid* and *cohesive filling*. If it is to be used cohesively, a slight *warming over* the flame will have the desired result.

Very good reports have been received from prominent practitioners.

Timme's Imported German Phosphate Cement, per box, \$1.00.

THE
Independent Practitioner.

VOL. VII.

APRIL, 1886.

No. 4.

Original Communications.

ON CERTAIN GAS-FORMING BACTERIA OF THE ALIMENTARY CANAL,
THEIR FATE IN THE STOMACH, AND THEIR REACTION ON
DIFFERENT FOODS.

BY DR. W. D. MILLER.

(Continued from the March number.)

In a previous number of this journal I made especial reference to five kinds of bacteria, which are characterized by the very considerable quantities of gas which they produce in starchy and saccharine substances, and further, by the marked resistance which they possess to the action of the gastric juice.

In view of the great importance which a thorough knowledge of the physiology of these micro-organisms has in the therapeutics of many disorders of the stomach, and especially in the dietetic treatment of such troubles, the results of a series experiments made in connection with this subject may not be without value.

Two questions in particular appear to me to require a solution: 1st. Are the micro-organisms which are taken into the stomach at any meal passed out or devitalized before the recurrence of meal-time, or does the stomach, of dyspeptics in particular, contain fungi at all times? 2d. In what manner is the quantity of gas generated by these fungi influenced by the kind of food taken?

Respecting the first question, practical experience would incline us to the belief that the diseased or impaired stomach contains micro-organisms at all times, otherwise how are we to explain the fact that

many patients almost immediately after taking starchy or saccharine foods are troubled with the distention of the stomach from formation of gas? I have demonstrated by various experiments that those fungi alone which may be swallowed with a piece of bread are certainly not capable of bringing about this distention. Nevertheless, it appeared desirable to test the correctness of this supposition experimentally; and since the proper experiments could be performed on the human subject only with great difficulty, I chose dogs as the subjects of experiments, as they have a digestive process very similar to that of human beings. Up to the present but six dogs have been experimented upon, but as the results were the same in every case, they are entitled to consideration.

Four of these dogs, all healthy, were fed for two days on a mixed diet of meat, bread, milk and sugar, richly infected with the gas-producing bacteria referred to. In every case diarrhœa made its appearance in from 30 to 40 hours, and in two cases distention of the stomach was very marked. After the last feeding they were muzzled to prevent the possibility of their taking anything into the stomach, and killed after $2\frac{1}{2}$, 6, 8 and 9 hours respectively. In every case, except the last, the four kinds of fungi administered were found in the stomach in great numbers, also in the large intestines; but few were present in the duodenum. In two cases the reaction of the contents of the intestines was strongly sour throughout, in one case slightly sour, and in one only was the reaction neutral or slightly alkaline. The remaining two dogs were treated in the same manner, except that the bread and sugar were omitted; the result was the same as above, only more marked. One of the dogs had profuse diarrhœa in 15 hours, and the intestines, six hours after feeding, were distended with gas, and the reaction strongly sour. In both cases the fungi were found in large numbers in the stomach, as well as in the intestines.

It appears from these experiments that these fungi can maintain their existence, even in the stomach of dogs, for 8 or 10 hours, and can thereby give rise to disturbance in the intestinal canal, and when we take into account the fact that the gastric juice of the dog is $1\frac{1}{2}$ times as strong as that of the healthy human subject, and from $1\frac{1}{2}$ to many times as strong as that of the dyspeptic or stomach-ailing, there is little room left for doubt that living fungi are constantly present in the stomach, and that many chronic troubles of the stom-

ach are due, not alone to the micro-organisms which are at each meal taken in along with the food, but more particularly to those which are already in the stomach at the beginning of a meal.

It is, consequently, of greater importance to sterilize the stomach before eating than to sterilize the food itself. For example: What is the use of repeatedly boiling milk to free it from every single germ, and then taking it into a stomach containing vastly more fungi than were in the milk in the beginning? It will furthermore be readily seen that the time for administering antiseptics is not after a meal, or upon the full stomach, but upon an empty stomach, about 10 or 15 minutes before meal-time. In order to determine what action these fungi may have upon the digestive process when the conditions present are such as to permit of their development, I swallowed a full grown test-tube culture of the *micrococcus aerogenes* immediately after a meal, consisting mainly of bread, potatoes and milk. A very disagreeable feeling of distention in the stomach and bowels appeared after about $1\frac{1}{4}$ hours, and annoyed me the whole of the next day; after 30 hours I was attacked with diarrhœa, which I aborted by taking 60 drops of *concentrated hydrochloric acid* after a light breakfast. The effects of the fungi did not entirely disappear for some days, and even on the fifth day I still found them in my fæces.

I attempted to effect a solution of the second question by the following experiments: I mixed 2.0 grams (30 grains) of the different kinds of food with 3.0 of saliva, added 5.0 grams beef-extract peptone-gelatine, which had been infected with *bacteria aerogene* (as I simply chewed up the food to be tested and mixed it with an equal quantity of the same gelatine). Each mixture was then poured into a separate test-tube, the level marked and placed at a temperature of 22° C. The amount of gas generated in the different tubes would be measured by the rise in the surface of the mixture. After a series of 19 experiments I succeeded in getting together a table of comparative values, in which bread is used as the unit of comparison.

As expected, it was found that the carbo-hydrates are particularly characterized by the production of large quantities of gas, whereas from the albuminous substances only a trace, or no gas at all, is produced. Among the ordinary articles of diet, bread and potato occupy a prominent place as gas-producers, and should be as much as possible avoided by the dyspeptic.

Of those foods which do not appear in the table, and which produce large quantities of gas, I may mention all kinds of sweet deserts, cakes, omelettes, pears, sweet apples, grapes, etc., etc. Cranberries and prunes produce no gas, because they do not furnish a favorable medium for the development of bacteria; if they are mixed with meat, however, a very rapid development takes place, accompanied by a production of gas.

According to these experiments, a diet for stomach-ailing patients, which should be followed by no production of gas, distention of the stomach, sour eructation, etc., etc., may consist of meat, eggs, fish, spinach, cheese, fresh lettuce, and small quantities of endives and sour cranberries.

The administration of an antiseptic before, and a digestive during or immediately after the meal, will materially aid the process of digestion.

I have had abundant opportunity to observe the happy action of the above diet on one who has for years been troubled with indigestion, arising from abnormal fermentation in the stomach.

I have thought that the above experiments might deserve a place in a dental journal, because certainly no professional man is more relied upon to maintain the integrity of the alimentary canal than the dentist, a healthy mouth being the first requisite thereto. I have, however, omitted the Morphology, Physiology, etc., of the micro-organisms under consideration, which have received the names *Bacterium aerogenes*, I, and II., *Bacillus aerogenes*, *Micrococcus aerogenes*, and *Helicobacterium aerogenes*.

POCKET DISEASE OF THE ALVEOLUS.

BY J. N. FARRAR, M. D., D. D. S., NEW YORK CITY.

(Continued from page 513, Vol. VI.)

As injurious as the malady termed alveolar abscess may be to the usefulness of teeth, there is a disease of the socket known as "Pyorrhea Alveolaris," which in its consequences is more detrimental.

A disease belonging to middle and later life, it attacks at all ages after childhood. Although seldom found as early as at ten years of age, it is not infrequent at twenty, very common at forty, and (in some countries) almost universal at sixty.

The chief characteristic of this lesion, which in its unchecked course passes from bad to worse through several successive stages, is separation of the lining membrane of the socket (scientifically denominated *pericementum*) from portions of the root of the tooth, thus causing a pouch or pocket between the two, with a mouth at the margin of the gum.

Deferring for the present the aspect of constitutional tendencies, this pocket appears to the naked eye to have its initiation in inflammation of the annular lip, known as the "gingival margin" of the gum, which in its normal condition generally constitutes a shallow trough around the neck of a tooth. From whatever this inflammation arises, the ring-like lip swells, causing more or less pouching, so that irritating matter of different sorts easily collects in the trough, which increasingly aggravates the trouble.

Often, if not generally in these cases, more or less pus discharges at the necks of the teeth. In some cases this pus is creamy in appearance, in others watery, and in quantity it varies from that which is invisible to a drop or two. As a rule, a visible quantity of creamy pus indicates the presence of large quantities of soft, degenerated deposits in the pocket, or rough, sharp incrustations of earthy matter upon the root, while a watery discharge is an evidence that the deposit is scanty in quantity, or comparatively smooth. Cases belonging to the latter class are generally more or less chronic.

After this disease has become passive it requires but slight irritation to keep it along. In fact, nothing more seems necessary than the alteration of the juices that ooze from the blood through the walls into the pocket, which soon becomes rancid, and made worse by microbes, which are generally, if not always, present. These are the cases which are sometimes cited as proof that this disease may arise independently of local irritations. But upon this point more is intended at another time.

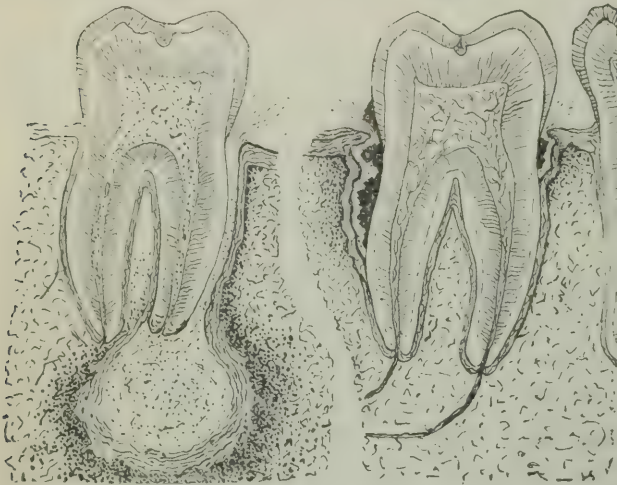
While entire sockets are occasionally affected, most of them are attacked only on one or two sides, ranging from a slight distance from within the annular lip to the entire length of the root.

In external appearance this *pyorrhea* (pus flow) resembles that

which I denominated in a course of lectures delivered at Philadelphia in 1878,* a whitlowic condition of alveolar abscess; a condition where the pus from the sac, instead of finding vent by the usual route, through the wall of the socket, travels along between its lining membrane and the root and makes its exit at the neck of the tooth. But the two diseases differ widely in cause and effect, as well as in location of their incipient stages, as will be seen by comparing the following diagrams. Fig. 5 illustrates a sectional

Fig. 5.

Fig. 6.



Whitlowic condition of alveolar abscess.

Pocket disease of the alveolus.

view of a perfected whitlowic alveolar abscess, in a pyorrhœic condition, discharging at the neck of a molar tooth.

Fig. 6 is a sectional view, illustrating pocket disease of the alveolus, with a deep pouch on one side, and a shallow one on the opposite of a molar tooth, both in a pyorrhœic condition, discharging at the neck, similar in external appearance to that shown by Fig. 5.

Both of the pockets in Fig. 6 illustrate (in block) irritating calcareous deposits upon the roots.

Differentiatedly speaking, one of these diseases kindles comparatively sudden, and is generally violent in development; the other is slow and insidious. One begins in the interior of the jaw, around about the end of the root, in the form of a tumor, and generally results in an abscess; the other starts on the exterior, just within the gingival margin of the gum, and by a sort of ulcerative process works down between the lining membrane of the socket and the root. (Never "beginning about the end of the root," nor is the cause the "same in kind as that which leads to exostosis or enlargement of the root.") One seems to make an effort to rid the part of an evil irritant by delivering it from within outwardly, generally through the side of the socket, as if attempting to do as little harm to the tooth as possible; the other from without inwardly, as if

* Published in *Missouri Dental Journal*, 1879.

bent on doing all the mischief possible, first to the socket by the "wasting process," second by the loosening and final ejection of the tooth, soon after which the disease generally vanishes. In short, one seems to act on the defensive, the other on the offensive.

Those rare cases of so-called alveolar abscesses which are said to form on the side of the roots of teeth having living pulps, where there are no pockets opening at the cervical margins of the gums, are not of this variety of socket disease. There are, however, two conditions of abscess that are the result of detached sharp fragments of calcareous deposits from the roots caused by this disease, or in later stages of the pocket disease, after having effected a carious condition of the alveolar process, which, although bodily not dead tissue, yet from decomposition of minute particles here and there, or from stasis in the soft tissues in the rear of the walls of the pocket, evolve gas, etc., and cause tumefaction outside of the alveolar process at greater or less distance from the pocket, but as these must be considered more in the light of "sequelæ" they do not strictly belong to the present aspect of the question, hence will not be further dwelt upon at this time.

In order to prepare your mind, I will anticipate some features of my story by briefly stating that it has been taught, and the notion appears to be generally believed, that there is always necrosis of some portion of the alveolar process in these cases, and that without it a true type of the disease does not exist, and based upon this, excision of the hard tissue has become almost a universal treatment.

Although sometimes present in later stages of the disease, I am led to believe, from careful investigation and treatment upon an average of about fifty teeth per day for several years, that this disease must really exist long before the alveolus can possibly become carious, a condition which, in some form, must precede necrosis. Furthermore, I think that although more frequently present among that portion of the lower orders of society which do not get their teeth extracted whenever slightly annoying, caries and necrosis exist only in a small percentage of cases. Especially so among the middle and upper classes, who are more in the habit of caring for their teeth.

At this time this statement may seem like heresy, but it is based upon careful records of every case in my practice for ten years, which show that only about one per cent. of the patients (not the

number of teeth) was afflicted with necrosis of the alveolus, the proof of which laid in the cure without surgically interfering with the alveolar process. The same evidence exists in the *almost* universally rapid cure after extraction, which would not be so if necrotic tissue remained.

Although my own practice shows only one per cent., I do not pretend that the experience of others must be the same; but supposing that others should find double the percentage, it would not materially change the basis of the conclusions. Although necrosis of the alveolar process is rare, the death and degeneracy of that portion of the cementum constituting one of the walls of the pockets is not common.

While this disease is as old as civilization, it received but little attention from the profession until a few years ago, and until of late was supposed to be incurable except by extraction of the tooth; but it is now known to be otherwise, notwithstanding it is pretended that all treatment is as yet empirical, on the ground that the etiology of the disease is not fully understood.

In such a state of things, as with all questions in dispute, various hypotheses and notions abound, some of which seem reasonable, others amusingly absurd, making it appear that all are groping in the shades of uncertainty.

Even the matter of a name for the disease is unsettled. While some people say that one name is as proper as another, and think that Tom Jones is a name for his characteristics, others think that in order to be as scientific and practicable as possible the characteristics of a disease should in a measure be expressed in the derivatives of the name. The term *Pyorrhœa* (pus flowing), although satisfactory to some people, with others is not; and although I am averse to innovations in nomenclature once accepted by any considerable number of people, I must say that with the dissatisfied I incline, for several reasons. 1st, the lesion does not always flow pus; 2d, it fails to express any idea of the chief and constant characteristic of the lesion (pocket); and, 3d, it fails to carry in its meaning sufficient diagnostic value to differentiate the disease from the other pus-flowing socket (whitlowic alveolar abscess), which also discharges at the neck of the tooth.

If what has been said be true, that the disease, so far as can be seen by the naked eye, commences about the neck of the tooth, and

extends down the socket-causing pockets, and if true that pus is caused by irritation from deposits within, and the disease vanishes when the pockets are carefully and thoroughly cleaned, and *kept clean*, or when the teeth are extracted, and the main conditions of the lesion differ from that of a whitlowic condition of alveolar abscess, and if alveolar caries or necrosis, if present at all, belongs to later stages of the disease, and is a result rather than a cause, then the suggestion naturally presents itself: Ought not the general name to be fixed upon the most pronounced constant feature?

Supposing it were possible to find a term that would by some modification differentiate the two kinds of "pus flowing," would it be best to confine the meaning to simply the act of flowing of pus, when it is well known that the act in a large percentage of cases is not visible? Admitting this, for sake of the argument, would it be much better to confine its meaning to any one of the stages, which, if present at all, would, by its transitional acts, soon lose identity? Even if comparatively stationary, would it be well to fix upon stage conditions, such as when the surfaces of the walls of the pocket have become pyogenic, or when the alveolar process has become carious, or perhaps necrotic, when we know that any one, or all, may possibly be wanting? On the other hand, if the lesion has a peculiar characteristic in the pouch or pocket formation, and this is the only constant characteristic feature of the lesion, does it not have the strongest claim to the name? It seems so to me, and for that reason I generally use the term in preference to Magitot's.

While I generally prefer to use the English language in expressing the name, I sometimes use the Latin equivalent, *Marsupiosis* (pouch disease), or *Loculosis* (pocket disease), adding *Alveolaris*, which, rendered in full, is *Marsupiosis Alveolaris*, and *Loculosis Alveolaris* (pocket disease of the alveolus). Of the two terms, the latter probably would generally be considered the more euphonious.*

* *Loc* (us)=a place.

(ul)=diminutive suffix.

Locul (us)=a little place, or hole; a fold in the "toga," used as a pocket.

os (is)=a Greek termination denoting the becoming, or the change to a certain state; as, *necrosis*, "the becoming dead."

Loculosis=the formation of, or "becoming," a pocket; or a disease which consists in the formation of a pocket.

Alveolaris=pertaining to, or situated in, the alveolus.

Loculosis Alveolaris=pocket disease located in the alveolus. Pocket disease of the alveolus.

To distinguish one phase of the disease from another, characteristic expressions, or numerals in the natural order of the successive stages, may be used. Thus, inflammation of the gingival margin of the gum (gingivitis) may be known as the first stage, while a later one, when the pocket has become established, may be known as the second, the carious as the third, and the necrotic as the fourth stage.

When, in order to be explicit, it is desirable to express the recurrent form of this disease (after once cured), which is liable in cases where death or low vitality of the cemental wall of the pocket prevents reunion with the pericemental wall, the termination *osis* may be changed to *itis*, thus: Loculitis (disease *of* the pocket), which easily distinguishes it from the original pocket disease.

Another modification may be convenient—the changing of the terminations above mentioned to *ic*—thus, Loculitic (as in the expression, “The sockets are in a loculitic condition).

To reiterate, these brief, explicit and easily-spoken terms in a nutshell, are as follows:

Loculosis Alveolaris = Pocket disease of the Alveolus.

Loculitis = Disease of the pockets (recurrent form).

Loculitic = In the pocket disease condition.

First stage = Gingivitis.

Second stage = Pocket established.

Third stage = Carious condition of the alveolar process.

Fourth stage = Necrotic condition of the alveolar process.

SOME THOUGHTS AND EXPERIMENTS UPON EROSION.

BY EDGAR D. SWAIN, D. D. S., CHICAGO, ILL.

In the literature of our profession we find the terms Denudation, Abrasion, Mechanical Abrasion, Chemical Abrasion, Spontaneous Abrasion and Erosion, employed to convey to the mind of readers two conditions, which, it seems to me, could better be expressed by the two terms of Mechanical Abrasion and Erosion. Mechanical Abrasion conveys to the mind that condition with which all practitioners are familiar, namely, a gradual loss of tooth substance, produced by the attrition of the teeth upon one another, or of foreign

bodies upon them. Erosion signifies the action of a corrosive substance, or the destruction of a part by a chemical agent, and applies equally well if the theory of destruction by micrococci be admitted.

Mechanical abrasion is of so frequent occurrence, and the methods used by our profession to arrest its progress are so well understood, that I pass it with the simple recognition that it is successfully arrested by the methods adopted by us.

Erosion, we will assume, covers all those conditions with which we are no less familiar, but the causes of which are less patent. Under this head we find the gradual wasting of an individual tooth, or of many, the wasting of the anterior teeth upon their incisive edges, or the cutting of grooves across their labial surfaces, and sometimes regular and irregular patches upon their labial and proximal surfaces.

Under the first condition the anterior teeth generally present an elliptic-shaped space between the upper and lower incisors, when the back teeth are closed. In these cases the destructive force can not be attributed to mechanical forces, because they can no longer be brought into contact with one another, and this condition can only be accounted for either by the theory of insufficient nutrition, the subsequent death of animal tissue and consequent falling to pieces of the mineral portion, or its destruction by some corrosive substance. A theory has been advanced to the effect that glands located in the end of the tongue become diseased, and secrete a substance sufficiently destructive to accomplish this result.

My own opinion is that we need no theory to better account for this kind of destruction than that of a deranged nutrition.

I have never, with teeth affected by this disease, been able to determine with the microscope that the terminal ends of the tubuli were filled with calcific material, or a deposit of any kind. Indeed, great difficulty is experienced in preparing specimens from such teeth for examination, because of the tendency to crumble, showing thereby a deficiency of the animal tissue. Such an attempt to resist the approach of destruction toward the pulp would not be consistent with a defective nutrition.

Teeth thus affected are never sensitive upon the eroded surface, and very seldom does the pulp become exposed, it receding and depositing secondary dentine, in amount about equal to the external waste in depth.

That feature of this disease which affects the labial surfaces of the anterior teeth, horizontally, about or just below the union of enamel and cementum, resulting in a groove or patch, with none of the characteristics of caries, no softening of the dentine, the entire groove presenting sharply defined edges and a highly polished surface, precludes even a possibility of mechanical causes.

Teeth affected in this manner do not seem to be subject to caries, but usually have the appearance of a perfect development, clean, with a well-polished enamel. The etiology of this disease has been a stumbling block in the research of all our authors upon dental diseases.

Mr. John Tomes believes it to be of a strictly mechanical origin.

Garretson, a disease of predisposition, the result of impressions at the time of enamel development, or that it is a result of electrolysis.

Fox looks to an abnormal condition of the secretions of the oral cavity and friction of the lips.

Hunter believes it a disease inherent in the tooth, and not dependent on circumstances in after life.

Harris attributes it to acidulated buccal mucus.

Taft advances no opinion.

Some have advanced the theory of a corrosive fluid secreted by the gingival margins of the gums, combined with a predisposition of the teeth to this disease, as the cause of destruction.

Leber and Magitot ascribe the destruction to leptothrix, which they found occupying the tubuli. Mr. Chas. Tomes believes that the solution of the question is to be disposed of upon the chemical theory, and argues that it is probable that mucus, by fermenting, affords an acid solvent.

Others have advanced the theory of absorption of the tooth substance. This is, of course, in direct antagonism to all theories of devitalization from a lack of nutrition, as enamel sufficiently deficient in vital force to resist the corroding influences would not have the necessary vital force to carry on the process of absorption.

Another class of writers have advanced the idea that the gingival margins of the gums secrete a fluid which acted upon the enamel, precisely as in the case of the absorption of the roots of temporary teeth.

This theory assumes that the process of absorption of deciduous

teeth is carried on by the acid of a fluid solvent, mechanico-chemical (if I may use such a term) more than purely vital or physiological in its action, the reverse of building up.

I have said above that Garretson favored a theory of electrolysis, to which I again return.

On page 505 of his "Oral Surgery" he says: "The present conviction of the author is that the true explanation is just now for the first time enunciated in the electro-chemical experiments made by Mr. Kincely Bridgman, and that in this direction will be found to lie not alone the cause, but the prophylaxis."

The experiments referred to were conducted by Mr. Bridgman for the purpose of sustaining an advanced theory regarding the cause and formation of dental caries. Mr. Garretson seems ready to adopt the results as accounting for the phenomena of erosion as well.

The experiments consisted in placing in cold dilute sulphuric acid rods of pure zinc, amalgamated with freshly distilled mercury, one-half the rod immersed in the fluid while the other half remained in contact with the atmosphere. I use his language to explain the results: "In a very short time bubbles of hydrogen made their appearance over the whole surface exposed to the acid, and in forty-eight hours the metal was found to have lost upwards of ten grains in weight. This loss, however, was by far the least important part of the result. The immersed portion of the metal had not been acted upon uniformly over its whole surface, but the action had been greatest at the surface of the liquid. At the same time the exposed portion had become covered with patches of crystalline sulphate of zinc, high and dry upon the projecting portion of the metal. Therefore, not only had chemical action been excited between the metal and the acid and the water decomposed, but there was the additional evidence that the metal itself had become polarized."

Another similar experiment, in which copper was used, varied in results only in the sulphate of that metal being deposited upon its exposed surface and corroding the wire half way through, at the line between the fluid and atmosphere.

. Another experiment to prove that this action which arises between the metal and acid was due to polarization followed, which consisted in wholly immersing a similar piece of wire in the acidulated water,

where it remained for months without imparting the slightest color to the fluid; but when by evaporation the wire became exposed to the atmosphere, chemical action again commenced.

Further, he says: "The atmosphere in its normal state being electro-positive, by a well known law of induction renders bodies opposed to it electro-negative. The exposed end of the copper is, therefore, thus rendered electro-negative, and the acid by the same rule being electro-negative also, the immersed end of the metal becomes electro-positive. It is an established rule that bodies to be electro-decomposed must first be rendered electro-positive, and also that bodies receiving an addition of matter must first be made electro negative."

"The appearance, however, of the crystallization upon what was at first the dry end of the metal, requires particular attention. It is one of the special effects of the electrolytic action that fluids pass to, and accumulate at, the negative pole. Obeying this law, the acid immediately begins to ascend and spread itself over the surface of the fluid, and, by capillary attraction, over the exposed end of metal, from which point it evaporates, having deposited its chemical product." There is very much more in explanation of the electro-chemical phenomena, but what I have quoted will suffice my purpose. Let us now apply the theory to the teeth, which take the place of the wire. That portion beneath the margins of the gums becomes the electro-positive, while the crown of the tooth is the electro-negative. The constant throwing off and decomposing of worn-out epithelial cells and other foreign matter, with the saliva, provides the necessary acid fluid.

As I could not learn that Mr. Bridgman had used teeth, instead of metals, in his experiments, I placed in a weak solution of sulphuric acid and water several teeth and a copper wire. The results fully determined the electro-chemical action upon both teeth and wire. Upon the wire a deposit of sulphate of copper, and upon the ends of the teeth (the crowns) exposed to the atmosphere, a deposit of sulphate of lime was found.

One of the teeth so used was prepared by cutting along its side a groove, which was filled with amalgam. I observed no difference between the chemical action upon this tooth and the others. Sufficient time was not consumed in these experiments to determine whether erosion could be artificially produced by this means.

It was observed, however, that as the solution was diluted from day to day, as it was during the last four days of the experiments, the deposits upon the teeth became more copious.

Mr. Bridgman, in drawing his conclusions, has failed to recognize a vital resistive force which must exist in teeth in the jaws, and also the fact that the fluids surrounding the teeth at the margins of the gums are, during waking hours, subject to constant change. Whatever the agent may be which produces the erosion, its action, we know, is very slow, and it may be possible that it would accomplish its destructive work during the hours of repose.

Some years ago I became convinced that erosion was not the result of mechanical causes. The worst case I ever saw, where the lower incisors were severed to, and in one tooth beyond, the pulp cavity, was in a mouth where a tooth brush had never been used. A neighbor dentist had a similar case about the same time. It was learned that both men were constant smokers of cigarettes, and when comparing notes we felt sure that we had discovered one of the causes of erosion. Two swallows do not, however, make a summer, nor do all the people whose teeth are affected with this disease smoke cigarettes; but we do find in these two cases conditions which could be favorably construed to the support of the chemical theory. The burning of paper, among other products, gives carbonic dioxide, which would naturally be a constant element in the mouth, and especially about the lower incisors. This, however, would account for a very insignificant number of the cases where erosion is met with, and consequently compel further investigation to account for the other cases.

A theory of caries advanced by a writer in one of our dental journals may be mentioned in this connection, namely, that destruction of the teeth by disease anterior to amalgam fillings is always greater than behind them; or, in other words, the presence of an amalgam filling in the first molar tooth has the effect to so change the condition of the nerve (or vital) forces, that teeth anterior to it become weaker, and are less able to resist disease, but as erosion (as well as caries) occurs where no amalgam has been used, we must drop such a theory as unlikely to give us any help in the direction sought.

So far, I am not personally convinced that any one of the theories advanced throws much light upon this subject. Still, they may be of

benefit to those interested, and possibly help some other individual who desires to investigate the causes of this growing disease.

That it is not caries, and is, primarily, a disease of the enamel, I believe to be true.

It is my intention to continue experiments in this direction, and I shall report progress at some future time.

SANITAS OIL.

BY A. W. HARLAN, M. D., D. D. S., CHICAGO, ILL.

On page 19 of the INDEPENDENT PRACTITIONER for January, 1886, will be found a short article on "Sanitas," by Dr. E. S. Talbot, of Chicago, attempting to disprove a well established fact—that Sanitas is a disinfectant. He says: "I was induced to try its disinfecting qualities (properties) from the following remarks of Dr. Harlan, * * page 269, *Ohio State Journal* for June: 'Sanitas is a disinfectant. * * * Its elements are capable of combining with sulphuretted hydrogen gas and other products of decomposition, and thereby destroying or removing them.' The first quality manifested was its odor, which remained for a great length of time. I made two applications to the root of an incisor, and was unable to treat further, as the patient could not endure the taste in the mouth. (The cavity should have been sealed.) I passed a probe into the canal, and the odor of Sanitas was stronger than sulphuretted hydrogen. I suspected that it had not disinfected, but its own powerful odor had covered other odors. I consequently commenced a series of experiments, (he only relates one,) and think anyone may confirm the results if he will do likewise."

Here is the experiment:

"I put a small quantity of H_2S in a test tube and added some water (he does not say how much water), then put a drop of acetate of lead (an aqueous solution, probably), on a strip of white paper and inserted it into the tube, which immediately turned dark. I put a few drops of Sanitas into the test tube, corked and shook it well, and let it remain a few minutes. I moistened the other end of the white paper with acetate of lead (aqueous solution), and dipped it into the test tube. The dark color is the same as before, showing that no chemical change occurred by adding Sanitas."

On two or three occasions the writer has ventured to call attention to new drugs, but more frequently his efforts in this direction have been limited to pointing out new uses for drugs, when they appeared to possess more than one desirable or useful property. Such was my object in calling attention to Sanitas Oil. It may be that some of the readers of the *INDEPENDENT PRACTITIONER* do not know what it is.

Sanitas Oil, which is oxidized oil of turpentine, was discovered by Mr. C. T. Kingzett, F. I. C., F. C. S. "It is prepared by exposing a large quantity of turpentine floating upon water to a blast of hot air, when the turpentine is oxidized and increased in density, giving rise to the production of camphoric peroxide, camphor, and various other substances of an oxidized nature. Some of these products, notably peroxide of hydrogen, camphoric acid and thymol, dissolve in the water forming the Sanitas fluid. Floating upon the surface of the solution is the oxidized oil of turpentine, Sanitas Oil."—(Stocken).

"I now come to another and more important matter, and that is to announce the discovery of what is, I believe, a better antiseptic than oil of eucalyptus for use in surgery; at the same time it is chemically allied to that substance, and but for economical considerations, can be produced therefrom. The product to which I refer is an oxidized oil of turpentine, in other words, the product which I obtain by forcing a current of air through turpentine in the presence of water (or otherwise) during a prolonged period, lasting in practice from one to two hundred hours. By this process of air oxidation the turpentine absorbs an enormous quantity of oxygen, increasing in density accordingly, and losing its very volatile character. Although the product is not, strictly speaking, soluble in water, it forms in contact therewith, or even in contact with any moist surface such as is presented by every wound, certain principles which pass into aqueous solution. These principles are strongly antiseptic, and amongst them peroxide of hydrogen is to be numbered. * * * It is freely soluble in spirit, and is perfectly miscible with other oils, and with petroleum bases, etc. A gauze can be readily made from it which keeps its strength, so far as I can judge, very well; and what is of more importance, it is a very powerful oxidant as well as an antiseptic."—*Lancet*, June 11, 1881. C. T. Kingzett, F. C. S.

"Sanitas Oil exhibits the same general properties (germicide, antiseptic, and disinfectant), in a very intense degree. In oxidizing power it is equal to a ten volume solution of peroxide of hydrogen, while in antiseptic intensity it equals phenol, thymol and iodoform. It is altogether superior to oil of eucalyptus." Address to members of the medical profession by C. T. Kingzett, F. C. S., Vol. 1885, Sanitas.

" * * * But there is another preparation * * * and that is the Sanitas oil. This substance contains an organic peroxide, and continually yields peroxide of hydrogen to water when placed in contact therewith. Whether, therefore, the oil be used alone or in the form of an emulsion made from it and gum acacia and water, or as a mixture with olive or other oils, it steadily goes on producing peroxide of hydrogen when in contact with wounds or mucous surfaces, in which, of course, water is ever present."—Peroxide of Hydrogen, etc., *Brit. Med. Jour.* Dec. 2, 1882.

"THE OWENS COLLEGE,
MANCHESTER, England, April 24, 1881.

"C. T. KINGZETT, Esq.,

"Sir,—I have pleasure in hereby certifying that Sanitas oil and Sanitas powder are in every respect equal to one or other of the disinfectants now on the list of the Marine Department of the Board of Trade. Also that these two substances act partly as antiseptics, like carbolic acid, and partly as oxidants, like Condyl's Fluid. Also that the Sanitas preparations contain no hurtful or poisonous ingredients.

Yours, etc.,

"H. E. ROSCOE,"

(Report on Sanitas oil by Prof., T. E. Thorpe, Ph.D., F. R. S., Prof. Chemistry "The Yorkshire College, Leeds.")

1st. Sanitas oil is obtained by forcing warm air for many hours through a mixture of oil of turpentine and water in varying proportions. * * Large quantities of a camphorated body are formed, which, in contact with water, generates peroxide of hydrogen, which passes, together with small quantities of other products, into water mixed with turpentine. The oxidized oil * * * contains a considerable amount of the body, which, in the presence of water forms hydrogen-peroxide, still undecomposed. On agitating the oil with successive portions of water, the peroxide may be readily

detected in the aqueous solution. There is reason to believe that the oxidized body thus formed in the turpentine is the camphoric peroxide discovered by Sir Benj. Brodie.

2d. The experiments on the behavior of Sanitas towards putrescible substances were begun during the last week in October, and have only just been brought to a close (Dec. 20th), * * * The oil has a much stronger or more persistent action than the fluid or powder.

Experiments—A piece of beefsteak suspended in water containing one cubic centimetre of Sanitas oil remained sweet for thirty-five days, whilst a similar piece in water containing no oil was putrid on the second day; so also was a piece of steak to which one-tenth of a cubic centimetre of Sanitas oil had been added. A solution containing one-half cubic centimetre preserved the beef four days. Flour-paste and white of egg remain apparently unchanged for much longer periods of time under the influence of Sanitas oil. Flour-paste containing one-half cubic centimetre of the oil remained perfectly sweet so long as the observations were continued (forty-seven days). Solutions containing ten cubic centimetres of white of egg, diluted with fifty cubic centimetres of water, experienced no apparent change in contact with one-half cubic centimetre of the oil during the whole period of the experiments, whilst both the flour-paste and white of egg solutions unmixed with the oil were sour and putrid within a week after being made. * * * Sanitas oil, like the fluid, is innocuous and volatile, and is not liable to deteriorate through changes of temperature or of climate. It has a strong aromatic smell, which, when diluted with air, is not unpleasant, a quality in which it differs from carbolic acid. It is difficult to say with accuracy how much more powerful it is than Sanitas fluid in its anti-putrescent action. Judging, however, from the amount of oxygen which it is capable of liberating, it cannot be less than from ten to twelve times as potent. This conclusion is roughly confirmed by observations on the rate of change of putrescible substances mixed with known amounts of the fluid and the oil."

"Sanitas oil, indeed, is the most powerful in its action, being fully as active in power of oxidation as a ten volume solution of peroxide of hydrogen. On putrid urine Sanitas was the only disinfectant that really had a true action, the others merely covering the

smell by their own. I found the Sanitas oil liberated more iodine than the same quantity of ten volume solution of peroxide of hydrogen." James Baynes, Jun., F. C. S., Public Analyst for Hull, England.

Le Sanitas. Il renferme de l'eau oxygénée, bien connue pour ses effets oxydants, extrêmement énergiques, qui la rendent éminemment propre à la désinfection et à l'empêchement de la putréfaction, en sorte qu'elle aurait sans doute été employée depuis longtemps comme désinfectant et comme antiseptique, si son prix élevé n'avait pas été un obstacle à son emploi. En tout cas, la richesse en eau oxygénée, seule assure au Sanitas le premier rang entre les articles employés dans un but semblable.

Docteur O. BILLETER, Prof. de Chimie.

Neufchatel, Suisse.

"When oil of turpentine is exposed to the air it slowly becomes solid, absorbing oxygen and becoming converted into resinous bodies. Among these bodies there is found a small quantity of camphoric peroxide ($C_{10} H_{14} O_4$) which undergoes decomposition in contact with water, yielding camphoric acid and hydric peroxide; ($C_{10} H_{14} O_4 + 2 H_2 O = C_{10} H_{16} O_4 + H_2 O_2$). This explains the observation that old oil of turpentine exhibits many of the reactions of hydric peroxide. By passing air and steam through oil of turpentine, a powerfully oxidizing solution containing hydric peroxide has been prepared by Kingzett, and proposed under the name of "Sanitas" for disinfecting purposes. It is worthy of remark that the leaves of the Eucalyptus Globulus, so much esteemed for its sanitary influence, also yield an oil similar to oil of turpentine, which becomes brown and resinous when exposed to air." Bloxam's Chemistry, pp. 475-6.

70 DEARBORN ST., CHICAGO, ILL., Feb. 25, 1886.

Prof. C. B. GIBSON, Ph.G.

Dear Sir,—Enclosed you will find two bottles labeled No. 1 and No. 2, each containing about one fluid ounce; will you be kind enough to test their disinfecting properties on $H_2 S$ and $P H_3$ and report the result to me at your earliest convenience, and greatly oblige,

Yours very truly,

A. W. HARLAN.

(Reply.)

College of Physicians and Surgeons }
 Chicago Chemical Laboratory. }

CHICAGO, 3-10, 1886.

Dear Sir,—I have made several experiments with the liquids you left for me. As regards their disinfecting properties when brought in contact with sulphuretted hydrogen and phosphoretted hydrogen, I used saturated aqueous solutions of these gases and made several tests in each case, using lead acetate solution and silver nitrate solution as indicators for H_2S and H_3P respectively. I find that 1 vol. of either the liquid or oil will easily deodorize and destroy the H_2S solution in twenty-four to thirty-six hours completely, no indications of its presence being given with lead acetate test. One vol. of the oil or liquid will completely deodorize five vols. of the H_3P solution in twenty-four hours, no indication of H_3P remaining. The oil is much more effective than the aqueous liquid, and would undoubtedly give a much better showing with more extended experiments. These tests were, of course, many times more severe than you would subject the substances to in actual practice, as the solution contained three and one-quarter vols. of H_2S to one vol. of water, and the H_3P solution was fully saturated. These liquids are undoubtedly powerful disinfectants, and must prove very valuable in the practice of dental surgery.

Respectfully yours,

CHAS. B. GIBSON, Prof. Chemistry.

Prof. A. W. HARLAN, M. D., D. D. S.

The bottles above mentioned contained Sanitas oil and Sanitas fluid. While temporarily sojourning in London this winter, I wrote to Mr. Kingzett, stating that a denial had been made by Dr. Talbot of the disinfecting property of Sanitas oil. I received a reply too long to quote entire. He says: “ * * * From time to time unscientific men, who are not at all qualified to write upon the subjects in question, make statements which it is scarcely worth my while to combat, and doubtless the remarks which you have seen in a late number of the *INDEPENDENT PRACTITIONER*, are of this character. It is positively absurd for any man who has the smallest smattering of chemistry to deny that Sanitas, containing as it does peroxide of hydrogen as one of its constituents, can decompose hydrogen sulphide, for every chemist knows that it is quite impos-

sible for the two substances to exist in mixture, the hydrogen sulphide being immediately decomposed by the peroxide."

I think from what has already been quoted that I need not burden the readers of this journal with any more proofs of my original statement, which was that "Sanitas is a disinfectant. * * * Its elements are capable of combining with sulphuretted hydrogen gas and other products of decomposition, thereby destroying or removing them."

I will say that I did not rely on my sole experiences of the value of Sanitas when I wrote my first paper, briefly describing its properties, but I had read the commendatory remarks of Messrs. T. Charters White, M. R. C. S., L. D. S., Fred. Bate, L. D. S., Yurnell Hammond, L. D. S., W. R. Humby, L. D. S., "Nature's Hygiene, 1st edition, Baillière, Tindall & Cox, Publishers, and several other very flattering notices. In conclusion permit me to express the opinion that Sanitas is perhaps the sole substance not poisonous to human life, at the present time, which is certainly destructive of ærobic and anærobic germs (Pasteur), and I believe, also, that there are few scientific practitioners of dental surgery who can dispense with its use after having fully and carefully tested it in daily practice.

Reports of Society Meetings.

FIRST DISTRICT DENTAL SOCIETY OF NEW YORK.

REPORTED EXPRESSLY FOR THE INDEPENDENT PRACTITIONER.

The regular monthly meeting and clinic of this society was held at the rooms of the S. S. White Dental Manufacturing Company, March 2, 1886.

The attendance at the clinic was reported to be nearly one hundred, and a great interest was manifested in the operations and appliances exhibited. Dr. John J. R. Patrick, of Belleville, Ill., demonstrated his method of making gold crowns for molar and bicuspid teeth, of which he had the dies for forty-eight different sizes and shapes. Dr. Patrick claimed that by his method he can make a crown in ten minutes, and can fit every root perfectly. They are made as follows: The metal is cut out round by cutters,

which are used in a small press. Then the cutters are removed, another appliance inserted into the press, by which the flat pieces of metal (in this instance, copper), were pressed into cup-shape. Then the crown dies were put under the press, wherein the metal cups, after they had been annealed, were pressed into the shape of the grinding surface of a molar or bicuspid tooth. This outfit for making artificial crowns is a very perfect one, at the same time saving a great deal of time to the operator.

Dr. H. A. Parr, of New York City, exhibited his new universal separator, applicable in almost every position of the mouth, even in irregularities, although it is not quite free from the objections of an instrument designed for universal application.

Dr. J. M. Crowell, of New York City, showed a platinum plate for continuous gum work, with perforations or small round holes, which had been made with a pair of punching forceps, and the edge of every hole had been compressed in such a manner as to form a complete collar, something like an eyelet. A plate thus prepared is very much stronger than if left smooth, as the body is very firmly held to the plate by the eyelet-like projections of the holes.

Dr. C. F. W. Bödecker alluded to an instance in his own practice, of a patient who, previous to wearing a perforated plate, had broken each continuous gum set in a very few months, but who has worn the perforated plate over a year, and not the slightest check is visible. Dr. Crowell also showed a piece of 18 K gold, with his new gum body flowed upon it. The color was good, and if it will prove serviceable it will be of great benefit to the profession.

Dr. M. Degenhardt, of New York City, exhibited an inferior molar tooth, to the anterior root of which was attached a very large pyogenic membrane.

Dr. E. Parmly Brown, of Flushing, L. I., demonstrated the use of his new moose-hide polishing points. Where applicable, they polish fillings and teeth very quickly and perfectly.

Dr. Brown had promised to set one of his new crowns, which have the platinum pins baked into the porcelain, but he was unable to procure the proper shade.

Messrs. Henry Hertig and H. C. Covert exhibited their new gas engine, in connection with Dr. C. F. W. Bödecker's regulator. An examination of this motor has convinced the most of those present

that, while at least equally as effective and economical in its consumption of gas for the relative power produced as any other motor, is simpler in the principles of its construction and operation, having no eccentrics, gear wheels, or other parts involving any complication, and it is consequently less liable to derangement, while it works more noiselessly than any motor which has thus far been exhibited.

The motor can be run at a speed of over four hundred revolutions per minute, without the failure of an explosion at each revolution. The cost of running the motor is from one cent to a cent and a quarter per hour, while its power is more than adequate for all dental purposes, being about one quarter of a horse power. It is, moreover, extremely compact, occupying a floor space of less than a square foot, and about two feet in height. The engine can be located, if desired, in the laboratory or cellar below, or in any room above the office, and be easily connected with a lathe, as well as with the suspension engine.

Dr. C. F. W. Bödecker's Regulator consists of a large cone, six inches in diameter at one end and one and one-half inches at the other, which imparts the motion to a transmitting wheel placed on the upper surface of the cone (which upper surface lies horizontal) in such a manner that, while in motion, the transmitting wheel may be moved from the small to the large diameter of the cone, thereby obtaining either the same number of revolutions as produced by the motor, four times as many, or any intermediate degree of speed desired. The transmitting wheel, which imparts the motion to the hand piece of the suspension engine, is held a little beyond the smaller end of the cone by a spring, and when in this position it does not revolve. To the bearings of the transmitting wheel a cord is attached, which is brought in connection with the treadle placed near the chair, to be manipulated by the foot of the operator. While the treadle is at rest no motion is transmitted from the cone to the transmitting wheel, but as soon as the treadle is pressed down, the transmitting wheel is pulled forward upon the revolving cone and motion commences. The greater the pressure brought to bear upon the treadle, the nearer the transmitting wheel will approach the base of the cone, and consequently the greater will be the speed, but the moment the foot is removed from the treadle the transmitting wheel is pulled back by the spring beyond

the revolving cone, when the revolutions of that wheel, as well as those of the bur in the hand piece, are instantly brought to a dead stop. Another valuable feature of the regulator is the device by which the motion can be instantly reversed. This reverse action is obtained by a pair of wheels playing at right angles upon a wheel situated at the base of the cone, which, at the will of the operator, can be made to revolve alternately either way. By connecting the action of the main shaft to one of the wheels driving the cone, the motion is transmitted in the direction that wheel runs. If the connection is made to the other wheel, the motions of the cone are instantly reversed, which reverse motion is obtained by pressing down a second treadle placed near the operating chair.

When the report of the Clinic Committee had been received, Dr. William Carr, the president, in the chair, called for incidents of office practice.

Dr. H. A. Parr, of New York City, gave a detailed description of his new universal separator, illustrating his remarks by a large sketch of the instrument.

Dr. S. G. Perry, of New York City, was sorry to hear from some gentlemen that, in a few instances, his separators as obtained from the S. S. White Dental Manufacturing Company, did not fit all the teeth they were made for, and expressed the opinion that, if such was the case, the fault was in the manufacturers of the separators. The models, as furnished by him, possessed none of the objections alluded to. Dr. Perry then spoke of the applicability of universal separators. He had found in his experiments that those instruments destined to fit a certain class of tooth only were the most practical. He had, therefore, abandoned the idea of a universal instrument. Dr. Perry then exhibited two new separators invented by his associate, Dr. Woodward.

Dr. C. F. W. Bodecker had used the Perry's separators where applicable, with greatest success, but found that he could never employ them between the lower bicuspid, upper canines and first bicuspid, or very irregular incisors, in which cases he had used Dr. Parr's separator very successfully.

The president then called upon Dr. John J. R. Patrick, of Belleville, Ill., the regular essayist of the evening, to read his paper entitled "The Progressive and Retrogressive Metamorphosis of the Jaws and Teeth." He described the anatomy, formation, and de-

velopment of the teeth of the entire animal kingdom, and the changes through which they pass. He gave an elaborate description of the mechanism of the jaws of animals, and explained the various modifications of the teeth to conform to the direction and manner in which the force is exerted in mastication. The motion of the jaws, he said, corresponds to the character of the teeth implanted in them, and the condyles and muscular arrangements are modified accordingly. Teeth in the human subject were described in the minutest detail as to position, shape, and the marks by which they may be distinguished one from the other, and a delineation given of the changes that take place from the time of the appearance of the deciduous set until the ossification of the pulps of the permanent teeth in old age.

Dr. Carl Heitzmann—Congratulated the essayist on the immense amount of study displayed in the elaborate paper, but regretted that he had not applied his energies to giving us something of a new or novel character.

Dr. Atkinson—Succeeded him, with his accustomed vigor, in commendation of the speaker of the evening, and the meeting having been protracted until after ten o'clock, the society adjourned.

NEW YORK ODONTOLOGICAL SOCIETY.

REPORTED EXPRESSLY FOR THE INDEPENDENT PRACTITIONER.

The regular monthly meeting of this society was held in the parlors of the New York Academy of Medicine, on Tuesday evening, March 9th, the President, Dr. E. A. Bogue, in the chair.

Prof. R. Ogden Doremus addressed the society upon the subject of "Cocaine and its Effects." The professor considered cocaine a marvelous drug, and its effects on the animal economy of a peculiar and sometimes of a startling character. He felt like saying a few words to "sound the alarm" concerning the indiscriminate employment of this agent, which he classed among poisons, and which he thought should be so labeled by whoever dispensed it. Like arsenic, the symptoms following its use were exceedingly varied and equally confusing. In overdoses it sometimes causes giddiness, vomiting, spasmodic muscular action, accelerated pulse, flushed face, dilated pupils, salivation, neuralgia, and paralysis. The unpleasant effects it produces sometimes last half an hour, and

sometimes a very much longer period. It should be used with very great caution, and for hypodermic injections the quantity should never exceed five or six minims of a four per cent. solution. The doctor read several letters from physicians giving reports of cases where very unpleasant effects were attributed to what had been denominated "Cocaine poisoning."

Although the elements forming the alkaloid were simple, viz: carbon, oxygen, nitrogen, etc., they were, nevertheless, the same that formed the base of other powerful or poisonous alkaloids. It is the peculiar combination of these elements that give them their peculiar properties, but how or why is yet a mystery. The professor spoke of experiments on some of the lower order of animals, where cocaine had caused salivation or death.

Dr. Hoyt, a New York physician, to whom one of the letters read by Prof. Doremus referred "as a sufferer from cocaine poisoning," being present at the meeting, was invited by the president to state his experience as a patient under the influence of this drug. Doctor Hoyt stated that he called on a prominent dentist in the city some eighteen or more months ago, for the purpose of having a tooth filled. It was a right inferior incisor, with a cavity extending far down on the cervical border, and which proved exceedingly sensitive to the touch of an excavator. In order to lessen the pain, cocaine was applied to the cavity some half dozen times at intervals, and he imagined with a slight degree of benefit, yet the operation gave him intense pain, despite the applications. After completing the preparation of the cavity, so far as was possible under the circumstances, the dentist inserted a gold filling which, however, from insufficiency of anchorage, came out in process of finishing, and a filling of oxy-phosphate of zinc was substituted. On the following morning Dr. Hoyt experienced difficulty in efforts to swallow his food, having lost the power of deglutition, and the right side of his face had a strange or benumbed feeling, which continually became more marked for two days, when the muscles of the face on that side, and of the arm, became partly paralyzed. This condition lasted ten days, after which time signs of improvement were manifested. Electricity was employed, and other means resorted to to effect relief, but eight weeks elapsed before a cure was effected. Even for a year after, the tooth and face were sensitive to thermal influences.

The doctor is a hale and robust specimen of the *genus homo*, and seemed to take pride in saying that he had never before suffered from any physical ailment. He believes his trouble in this instance due in part to the excessive pain caused by the operation, giving such irritation to the tooth-pulp as to affect the nerves of the face, and in part to the application of the drug, which also had a specific action on these nerves.

In reply to inquiries concerning exposure of the pulp, Dr. Hoyt stated that he did not believe the pulp was fully exposed, but nearly so.

Dr. C. A. Woodward—Asked Prof Doremus if any antidote for cocaine poisoning had been discovered; to which query Prof. D. said he thought not.

Dr. Hoyt believed *nux vomica* an antidote. He used it in his own case.

Dr. Bogue—Remarked that from a hypodermical injection in his own mouth he experienced at first a degree of nausea, then a feeling of numbness of the face, which lasted twenty-four hours.

Dr. E. H. Raymond read a paper giving what he knew of the effects of cocaine from his personal observation. Although he had read of some cases of partial paralysis resulting from the use of this drug, he was, nevertheless, not afraid of it, yet admitted that it should be used intelligently and with due caution. Wishing to avoid giving pain in preparing cavities in sensitive teeth, he was glad to find some agent that would tend to render such operations painless. Various methods for producing local anæsthesia had been tested, but most of them were unsatisfactory, Dr. Raymond gave a somewhat lengthy recital of cases he had treated by hypodermic injections of cocaine, and of the results in each case. He also spoke of the various temperaments of patients thus treated, giving emphasis to the fact that temperament had much to do in giving direction to results, and it is a matter of great importance that the temperament of patients under any sort of treatment should be duly considered. As to whatever may be said concerning cocaine and its effects, he believed that "conservatism is better than enthusiasm." The doctor cited cases of mistaken diagnosis, and depicted the dangers liable to result from such mistakes; also reminded his hearers that newspaper reports of surgical cases are not always accurate or reliable, and that due allowance should

be made for exaggeration. He referred to the general and free use of cocaine among the natives of countries where it is gathered, and its harmless effects on those who partake of it. He thinks we should deal with facts and not be blinded by speculations, and so check the wheels of progress. If any remedial agent is suspected of producing injury, heaps of condemnation are cast upon it. If a cure happens to be effected by its use the remedy is supposed to be all right, but if death follows it is all wrong.

From the doctor's closing remarks one might infer that many individuals are much influenced by fancies and prejudices.

Dr. J. W. Clowes—Could see no necessity for using cocaine as an obtunder of sensitive dentine. He preferred chloroform, which he conveys to the cavity on a pellet of cotton, even allowing a little of it to be swallowed by the patient. With him it acts like a charm. He favors the practice of killing pulps with a paste of arsenic and creosote, but says that morphine should not be added, as it counteracts the action of the arsenic. Dr. Clowes intimated that suggestions from old heads were worthy of consideration.

Dr. G. W. Weld—Claimed that a spray of the solution of muriate of cocaine forced against the roof of the mouth was of great benefit to the dentist in enabling him to take impressions for artificial appliances. In five minutes after using it impressions could be taken of the most sensitive mouth without trouble, and with no harm whatever to the mucous membrane. Dr. Weld exhibited two styles of atomizer, either of which would answer the required purpose.

Dr. N. W. Kingsley—Knew of something far better than a spray of cocaine, claiming that skill was all that was needed.

Dr. J. Morgan Howe—Thinks cocaine may be of use for some purposes and useless for others. For sensitive dentine he thinks it not worth the while to employ it. He objects to Dr. Raymond's method of injecting it into the mental foramen, which he considers too much risk for so little gain. It may, however, be used advantageously as an application to the gums when removing calculus, opening abscesses, probing sinuses, etc. At the risk of being considered by Dr. Kingsley "unskilled," he had been much aided by the use of cocaine in taking impressions of the mouth. Dr. Howe cited one case in particular, which was quite interesting. In endeavoring to get an impression of a gentleman's mouth for an arti-

ficial denture, he found the mucous membrane of the roof so exceedingly sensitive that it would not bear the touch of the impression cup, and even a touch with the finger caused severe gagging. The gentleman said that repeated efforts had previously been made by other dentists to get impressions of his mouth, but without success. He had submitted to trials nine different times, and each time he nearly gagged himself to death. Remembering that Dr. Bogue once suggested the use of cocaine in such cases, Dr Howe applied a little of the solution to the roof of the mouth, and in six minutes after took the impression without trouble.

Prof. Doremus—Did not wish it understood that he discounted the use of cocaine, but he thought it should always be employed with caution, and he objected to its being sold and used indiscriminately. He would have druggists who sell it label it "poison."

The President announced that on this occasion the order of business had been reversed in order to allow guests who had other engagements to depart early. He then called for "Incidents of office practice."

Dr. C. D. Cook—Presented a plaster model of a peculiar case, representing an upper set of natural teeth in which were six well developed bicuspid.

Dr. J. M. Brigiotti—(formerly of Paris,) sent to the society casts representing the teeth of a lady thirty-two years of age, where an unsightly and complicated articulation coupled with "jamber-jaw" was corrected, and this accomplished by extraction and a regulating appliance. In this case very good results were secured. Accompanying the casts was a short paper descriptive of the case and its treatment, which was read by the secretary.

LOUISIANA STATE DENTAL SOCIETY.

ANNUAL MEETING FOR 1886.

REPORTED FOR THE INDEPENDENT PRACTITIONER, BY "MRS. M. W. J."

The first public meeting of the Louisiana State Dental Society was held in Tulane Hall, New Orleans. The meeting was called to order at 10 A. M., March 4th, and continued three days, with two daily sessions.

An address of welcome was delivered by Col. Wm. Preston Johnston, President of Tulane University. He bade the profession a hearty welcome to the precincts of the University, which was always ready to open wide its doors for anything in the line of educational progress. He said that education is the great civilizing and lifting power; that it has made dentistry what it is, an honored and honorable profession; one that requires the exercise of all the faculties of the mind in combination with the highest mechanical skill and ingenuity, and all for the alleviation of human suffering and the promotion of health; a profession to which all of the arts and sciences are tributary. He suggested, as a practical plan for the advancement of the dental profession in Louisiana, the institution in Tulane University of a one year's course, preparatory to the Dental College; a course which shall include English, Biology, Physiology, Physics, Mechanical Drawing and Manual Training, all to be taught by a corps of the ablest men drawn from the highest institutes of learning. The special advantages gained by the two latter branches would be the training of the fingers to that delicacy of touch so essential in their profession, and of the eye to accurate measurement and judgment of color and form; they would also be trained—not as mechanics, but as artists—in the working of both wood and metals, and in the plastic arts. If this suggestion met with favor, the privileges would be extended to both medical and dental students, and he hoped they would urge its adoption and accept its benefits.

Geo. J. Friedrichs, M. D., D. D. S., in his

PRESIDENTIAL ADDRESS,

briefly reviewed the history of the society from its organization in 1878. He pointed out the advantages of association in consolidating the profession and advancing it in its great and humane work. He paid a graceful tribute to the Fathers of dentistry, whose names are inscribed upon imperishable tablets in the temple of fame. He pointed out the urgent necessity of securing effective legislation against the inroads of professional incompetents and unprincipled adventurers. He considered the detection and remedy of predisposing causes of dental caries a fit subject of public sanitation, and that it was the province of dental societies to shape public opinion in this direction. He was scathingly severe in his rebuke of

THE ADVERTISING DENTIST.

He said: "He is not a contented man, for he publishes to the world that a generous public has not awarded him his due share of employment; he is not an upright man, for he disregards the ethics of his profession; he is an unprincipled man, for he tries to raise his own status by debasing the standing of his fellow-practitioners; he is an arrogant man, in his presumption placing himself above being taught; he is a conceited man, for he judges others by his own standard; he is a selfish man, his whole soul wrapped up in self; he is a dishonest man, for he promises results which he knows cannot be attained, and thus he procures money under false pretenses.

The first paper read was the report of a case of Antral Catarrh, in the practice of Dr. L. C. Anderson, Lake Charles, La., which, after unsuccessful treatment for six or seven months with Iodoform, Boracic Acid, Carbolic Acid, etc., yielded to two weeks' daily treatment with Corrosive Sublimate, (2 gr. to the oz). This case had been under physician's treatment for three years. There had been no relapse during the year since the case was discharged as cured.

Dr. J. S. Knapp—Thought that comparatively few cases of antral diseases were permanently cured. Had met with some success in the use of wood creosote, three drops to a teaspoonful of alcohol in two oz. of water, injected daily. A diseased condition of the antrum was sometimes due to a dead molar, of which the roots had penetrated the floor of the antrum. In that case the tooth should be removed, and the antrum treated through the opening made by the roots.

Dr. A. G. Friedrichs—Considered drainage and cleanliness essential points. Failures are largely due to the neglect of patients in following directions.

Dr. D. G. Parker—Treated with a twenty per cent. solution of elixir vitriol. Described a case in which necrosed alveolar process followed typhoid fever. Three fingers could be passed through the opening into the antrum. Loose pieces of bone were removed for nine months. A perfect cure was finally effected, using only elixir vitriol.

Dr. G. J. Friedrichs—(from the chair)—Said that a congested condition due to common cold, which would get well without treatment, was often mistaken for antral trouble successfully treated.

Dr. Salomon read a paper entitled

PHYSICIAN AND DENTIST.

It was a discussion of the relationship between the two professions, and the difficulties of drawing the line and saying how far the province of one extends, and where the duties of the other begin. He cited numerous cases of mistaken diagnosis by the physician, of exostosis treated for a tumor, etc. In one case in his practice, a young girl, thirteen years old, had been under treatment for supposed mumps, having been confined to her bed for two weeks with the swelling, growing worse continually. Being sent for, he found the jaws so rigidly set that for two days it had been impossible to introduce the handle of a spoon between her teeth. Cold applications externally, with listerine as a mouth-wash, injected with a small syringe, and the administration of quinine, so relaxed the muscles that he was able, the next morning, to introduce the little finger. He found a large swelling extending from the first lower right bicuspid to the second molar. He applied a twenty-five per cent. solution of cocaine (Merck's) and was able, without much pain, to open the mouth with a Stellwagen separating forceps. He found two small temporary roots wedged between the second bicuspid and the molar. Extracting these, a copious discharge of pus followed, and the mumps disappeared in twenty-four hours.

The other case had been treated for months for a tumor underneath the ear, for which a surgical operation was advised. The upper right wisdom tooth was found to be slightly decayed, and its position somewhat abnormal. A fine, flexible, steel probe, following the direction of the roots, revealed a mass of soft deposit not unlike macerated bone. The extraction of the wisdom tooth was followed by the speedy disappearance of the tumor. A knowledge of oral surgery, on the part of the physician, or the moral courage to admit the lack of it, would have spared the patient much agony of mind.

He said that the men who make a trade of tooth-pulling, who parade in the newspapers as "The only man with the gas engine;" the "Hypnotic Air" quack; "The Champion Exposition Dentist," etc., have degraded the profession of dentistry, and made the medical profession justly afraid and ashamed to acknowledge it, even as a specialty; that a dentist to be justly entitled to the name,

should not only know how to make beautiful fillings, but he should have a knowledge of the causes of caries, and should thoroughly understand general pathology and physiology; that without this knowledge he could not, for instance, diagnose the causes of the swelling of the gums in girl patients at a certain age, or under certain circumstances, and in his ignorance might scarify or even cauterize the gums; neither could he understand the dental troubles of pregnant or nursing women, or the marvelous changes in the saliva in such cases. He considered that the dental surgeon required the same degree of knowledge, intelligence, and judgment as the oculist or the aurist, and must have them if he would stand on a par with them in the medical profession. He agreed with Dr. Chapin A. Harris, that dentistry should be taught in medical colleges, with special chairs for oral surgery and operative and mechanical dentistry, as is now the case in the Universities of Michigan, Pennsylvania, and Maryland, and the Vanderbilt University, Tennessee.

He said that in this scientific age, to prove our claim to membership in a scientific profession, each individual should practice his profession on a scientific basis, from a scientific standpoint. On the other hand, he considered that the physician should have a more thorough knowledge of the effect of his medicines and treatment on the oral cavity and its contents, and especially of the relationship between the oral cavity and the uterus, and reflex action as seen in the pains in sound teeth during gestation. He should understand the effect of a continued hyperæmic condition of the blood-vessels upon tooth-structure; of diseased teeth upon the general health; of the foul air and gases generated by decayed teeth in causing tubercular conditions; the connection between diseased teeth and troubles of the eye or ear; he should be able to distinguish between nasal catarrh and alveolar abscess, etc.

Finally, he urged that dentists, individually, should strive for special improvement and higher education, reading the journals, working in associations, putting down quackery, etc. In that way only would dentistry receive recognition as a fruitful branch of the great tree of medicine.

Dr. Salomon brought before the society, as illustrating his position, a man who had fractured his jaw two years ago by lifting a chair with his teeth. Four months ago Dr. S. had examined his

case, and advised the removal of all necrosed bone and the application of an interdental splint, with an outside plate. His advice was not taken, but two months later the man placed himself under the care of two eminent surgeons. During two months' treatment they had only removed the loose pieces of necrosed bone. The fracture is not reduced, and pus is still oozing freely. The case was examined by members of the society, and the present condition found to be as stated.

Dr. A. G. Friedrichs—Thought the physician not so much to be blamed, as proper instruction in dental specialties was not given in the medical course. Only the dentist who was also a medical graduate, could appreciate how little medical students were taught of dentistry, the structure of the teeth, and their use in mastication, as the initiative of digestion included it all. The physician may vainly treat for weeks, through incorrect diagnosis, cases that the dentist would comprehend and cure at once.

Dr. J. G. McCulloch—Thought it proved, by the cases cited, that the physician had far greater need of a dental education than the dentist of a medical course.

Dr. D. G. Parker—Thought that dentists could accomplish much in the right direction by calling the attention of physicians of their acquaintance to such cases.

Dr. Jos. Bauer—Thought that the dental colleges had culled from the medical curriculum everything essential to dental science. Anatomy, Physiology, Histology, etc., were thoroughly taught to dental students, and there is no necessity for a dentist to graduate as a physician. The degree of D. D. S. should rank as high as M. D. in their respective professions.

Dr. G. J. Friedrichs—Thought that the paper opened up a wide field in the ethics of both professions. That a thorough medical course was only the proper foundation or starting point of a dental education; that it would prove an invaluable help.

Dr. O. Salomon—Did not consider it necessary for the dental student to take the degree of M. D. Many Universities have dental departments, dental students taking the regular medical course in anatomy, physiology, etc., with special additional lectures in dental specialties, operative and mechanical.

Dr. Jas. S. Knapp read a paper entitled

CYLINDER FILLINGS.

He considered cylinders the best form of gold for arresting

caries, accomplishing, by the wedging process, the most thorough exclusion of air and moisture, by the most expeditious method. The welding process is very slow, difficult of adaptation to the borders of the cavity, and involves an amount of pressure dangerous to frail walls, also necessitating the use of the rubber dam, which not more than ten men in the United States are capable of applying quickly and accurately in cases of more than ordinary difficulty, and which occasions great discomfort, and even pain to the patient, and much worry to the operator. He described in detail the method of making and using cylinders, having some of them cone-shaped, dovetailing them in insertion, and condensing by lateral pressure. He claimed that the duration of contour fillings of cohesive gold was very brief as compared with cylinder fillings. Contour fillings leave imperfect margins, causing the contiguous tooth substance to disintegrate. With cylinder fillings there is a saving in cost to the patient, of time and labor to the operator, and greater benefit to the tooth.

Dr. O. Salomon—Considers the use of the rubber dam a great advantage, especially the "depressed dam," even for cylinder fillings.

Dr. A. G. Friedrichs—Thinks one great advantage of cylinder fillings to be the rapidity with which gold can be inserted; that it is not essential to keep the cavity absolutely dry; that the gold being thoroughly impacted against the walls of the cavity, all moisture is driven out, and no matter how dry it might be kept during the operation, natural fluids oozing from the tubuli would create some moisture.

Dr. J. R. Knapp—Considered many points in the paper extremely extravagant. In the natural position of the teeth they touch each other only at one point, near the grinding surface or cutting edge. Gold, when replacing tooth-substance, must restore the natural form of the tooth, which cannot be done with cylinders. The latter method also necessitates cutting away tooth-substance to make space for operating. He said that the majority of patients prefer the rubber dam to wads of paper and rolls of napkins saturated with saliva. The labor bestowed upon contour fillings in giving a perfect finish is not for the purpose of display, but to give a hard, dense surface for wear, and which prevents particles of food from lodging where they would generate acids and produce new decay. Cohesive gold work is slow only because it is thorough and artistic. With the electro-magnetic mallet, gold can be im-

pacted against frail walls that would not bear the pressure of cylinder filling. Teeth which are separated and sawed between would come together again, the teeth even moving in their sockets to effect contact, the whole physiognomy being thus changed for a lifetime by this malpractice of dentists in using a "cross-cut saw" between the teeth. We should leave the teeth as nature designed them.

Dr. Jos. Bauer—Though he used cohesive gold with the electric mallet, thought it might be well, in large cavities, to begin with cylinders and finish with cohesive gold. He did not consider it necessary to restore the contour of approximal surfaces of incisors and canines, leaving a V-shaped opening from the approximo-palatine surface. The teeth touching at the labial or buccal surface, there is no disfigurement, and they become self-cleansing. There is much of good in the cylinder method, and it would be more used if better known.

Dr. Geo. J. Friedrichs—Said that the reason why cylinders were not better known was because the method was not taught in our colleges. Gold could not be so condensed as to resist mastication; even eighteen karat gold will wear down in six months. He cited the case of a patient for whom he built down eleven teeth with cohesive gold, giving a masticating surface which wore down in six months so as to require rebuilding. Wearing down again in the same time, he made solid gold caps, with no better results. He then built down the cuspid only, opening the bite a quarter of an inch, and inserted artificial teeth, which have done good service for three years, and the cuspid building still remains good. The best of fillings are, he considered, only temporary, the majority not lasting more than ten years. He was opposed to restoration of contour, or "knuckling," where occlusion would drive it out of place or mastication wear it down.

Dr. J. R. Knapp—Said that if properly filled with cohesive gold, the gold and the tooth material would wear down evenly, with the margins intact.

Dr. D. G. Parker—Would obtain space by pressure with rubber wedges, and half-fill with cylinders, finishing with cohesive gold and contouring, using the rubber dam. In a frail bicuspid he would cut out the fissure between the cusps, building through with cohesive gold.

(TO BE CONTINUED.)

THE PLACE OF MEETING.

The permanent reference of the selection of the next place of meeting to the Executive Committee of the American Dental Association is a thing which may result beneficially or the reverse, according to the composition of that committee and its liability to be influenced by personal considerations. It is quite within the bounds of possibility that circumstances may arise during the year that may make it advisable to visit some place not thought of at the time of meeting, or developments may make it unwise to hold the meeting at the place which the majority of the members would have chosen. On this account it may be well to refer the choice to the committee.

But on the other hand, it might possibly be charged that some member or members had a personal end to gain in the selection of a particular place, and that their own selfish gratification outweighed their desire for the good of the Association. There has, at times, been manifested too great a desire to manipulate and manage the society, after the fashion of a political caucus, and the reference of such important matters to a committee might tend to encourage this disposition; so it is a subject that should, in the future, be carefully considered.

This year a number of places are petitioners for the meeting, and the committee, wisely we think, has referred the matter to the members for decision. The chairman of the Executive Committee has issued circulars urging the selection of Chicago, while the secretary has laid the claims of San Francisco before the members.

In this number we print the circulars issued, and lay before the profession sufficient data to enable each one intelligently to make a decision. To do this it has been found necessary to devote to this subject the space usually allotted to other matter. A number of editorial articles that were already in type, have, therefore, been set aside until there is less pressure upon our pages.

It is very earnestly urged that *every member*, or intending member, should *at once* notify the chairman or the secretary of the executive committee, in unequivocal terms, of his preference in the matter. If this be promptly done the committee can soon announce the place of meeting, and preparations can at once be begun.

When a majority of the members have expressed their preferences, that should end the matter. There should be no coercion or restraint used, but a ready compliance with the wish of the majority. The society will submit to no juggling, and he is not a good member who refuses cheerfully to accept the result of the poll.

THE AMERICAN DENTAL ASSOCIATION.

WHERE SHALL THE NEXT MEETING BE HELD, CHICAGO OR SAN FRANCISCO?

At a meeting in Buffalo, in December, at which six members of the Executive Committee were present, an informal meeting was held and a vote was taken, resulting in five for Chicago, one for Buffalo. It was the understanding after the vote that the final decision and completion of arrangements should be left with the Committee of Arrangements, they to be governed by circumstances in the final decision. Since more recently, a proposition to hold it in San Francisco has been made, it is deemed best to submit the question to the profession.

The reasons for going to California have already been so fully given in an article in the dental journals, and more recently in a circular letter, that it is unnecessary for me to take space to present them again. They read well, and make us all feel like saying *Go!* *Why, of course!* But facts are hard things to knock against, and it will be found much easier for the majority of the dental profession to say to some other fellow, "*Go!*" than it will be to muster the money and spare the time to go himself. The rank and file of our profession are not rich men. The question of expense has to be considered by many.

A large per cent. are young men that need the meeting, and the Association needs them. How many will feel that they can spare the time and money necessary for so long a trip? Calculate a week to go, a week to return, the best of a week for the meeting, and two weeks to see California and the Great West, including points of interest on the route, and five weeks are gone. Fare from Chicago, round trip, \$62.50. Meals and sleeper, about \$5 per day. Expenses, \$5 per day at lowest estimate, at a time when the city and surrounding country are thronged with the Grand Army and thousands of strangers. Add to this, extra railroad and steamboat fare for all side trips to points of interest, and the extras that you can never plan for, and it is easy to see by all who have traveled much that \$300 would be a *very* low estimate for the expense, besides at least five weeks of time. Those who have been to California all coincide in the statement that one cannot see enough of California and the West to pay them for going without a greater expenditure of time and money than we have named. It is well known that July and August are the most disagreeable months in which to make the trip to California, and we see the country at its worst. These are the months when Californians get away if they can. Since learning the desire of some that the American Dental Association should be held in San Francisco, the California Dental Societies have very courteously invited us, and we are sure their hospitality will be fully appreciated by all, but there are times when we cannot afford to accept even hospitality. This is one. The Association would lose too much. We could not hope for any large accession of new members, nor for the new ones gained to often meet with us from so great a distance, and we should lose many.

Chicago was selected on account of its being central, easily accessible from all parts of the country at low railroad rates, and of its having unsurpassed hotel accommodations, and cool summers. The fact that a hundred of the new members elected last year were Western men and should be held, also entered into

the decision. Your Committee have been quietly planning and working since the last meeting to insure at our next the largest attendance and most successful meeting ever yet held, feeling that each meeting should be an advance upon the one that precedes in points of numbers and interest; that we ought not only to hold the new members gained last year, but that we should add as many more at our coming session. It is too soon to complete definite railroad arrangements, but if the decision is for Chicago, we expect to bring them within the reach of all.

At a meeting of the Chicago members of the American Dental Association and of the Chicago Dental Society, called to ascertain the views of the profession here, March 17th, the following resolution was adopted by a vote of twenty-seven to five:

"*Resolved*, That it is the sense and desire of this body that the next meeting of the American Dental Association should be held in Chicago, and that we extend to the Association a most cordial and hearty invitation to meet with us."

AN EXCURSION TO CALIFORNIA AFTER THE MEETING.

Your Committee are assured by the railroad authorities that they can have equally as favorable rates in all respects for an excursion upon close of the meeting, if any considerable number wish to go to California, as are promised for the Association. The Committee will see that *no pains are spared* to make such an excursion a success, if enough signify their wish to go to warrant making the arrangements. Thus, none who wish to go will be deprived of seeing California at the reduced rates, while great numbers will not be deprived of attending the Association because they cannot afford a trip to California. It is a serious question whether the Society has a right to hold its meetings beyond the reach of so large a class. Let us remember that our Association is a scientific body, intended to reach and benefit *the great body of the profession* as far as possible.

There has been so much discussion of the whole subject, in the Committee and out, and the Committee are at such distances from each other, that it is impossible to get a united expression of views *in time for the journals*, as promised, hence I submit this as an expression of a part of the Committee. Am very sure that each member of the Committee wishes to do only the very best thing for the Association, and to carry out the wishes of its members, and your votes will show us what those are, and greatly facilitate the work of the Committee.

Please answer *promptly* by letter or postal the following questions:

In your judgment, should the meeting be held in Chicago or San Francisco?

Do you expect to attend the meeting if held in San Francisco?

Do you expect to attend the meeting if held in Chicago?

If the meeting is held in Chicago, will you probably go to California after the meeting is over, if an excursion is decided upon?

J. N. CROUSE,

Chairman Ex. Com. and Com. of Arr.

2101 Michigan Ave., Chicago, Ill.

TO THE MEMBERS OF THE AMERICAN DENTAL ASSO'N.
AND OTHER DENTISTS.

SALEM, MASS., March 20, 1886.

DEAR DOCTOR :—Desiring that you should have all the facts in my possession, bearing upon the question of a selection of time and place for the next meeting of the American Dental Association, I again address you upon the subject. Since the organization of the Executive Committee last year, there has never been a formal meeting of the committee. At the time of what is known as the Buffalo Conference, last November, it was found that a majority of the Executive Committee were present, and so an informal meeting of those present was held and the matter of a place for our next meeting was discussed. The Secretary of the Committee stated that he had received urgent official letters of invitation for the Association to meet in Buffalo, from the Buffalo Dental Association and the 7th and 8th District Societies of New York. The Chairman objected to Buffalo, stating that in his opinion there was not sufficient hotel accommodations, and said that Chicago was the only proper place to hold the meeting. To this one member said he had spoken to a number of our leading members from Chicago, and they had expressed themselves in opposition to our meeting there next time. To this the Chairman replied that if the Committee would put their feet down upon the idea of accepting any kind of a reception or banquet, a thing, which in his opinion, we ought now to do, there would be no objection to our meeting in Chicago. After some further discussion an *informal* vote was taken: votes being cast for Buffalo, St. Louis and Chicago, though the latter had the greatest number. It was then agreed that the members of the Committee should ascertain all they could about railroad rates to and from various places that would be suitable for the meeting and correspond or have some future meeting of the Committee for decision. Such is the record. After I had received the assurance, from agents of the transcontinental lines, that my efforts to get the Grand Army rates to San Francisco would probably meet with success, being in New York at the meeting of the Odontological Society, where, among a large body of dentists present, were many of our members, I began to tell them what rates we could have if we wished to have the meeting in San Francisco. I found there was much enthusiasm upon the subject, and many at once declared they would go. "Well, we ain't going all the same," exclaimed the Chairman, who was present arguing against the idea of going. I simply replied that I thought we should if the members wished to do so. Dr. C. then began complaining of me for talking about the matter at all, saying, "just hold up now, and let the Committee get together and decide this thing." He was told by myself and one other of the Committee present that the matter was of sufficient importance to submit to the members for their judgment, and that there was then an opportunity to consult with nearly fifty of our members. There the matter dropped. I had previously written to several of the Executive Committee, and all from whom I had heard replied strongly favoring the idea of going. The Chairman did not answer my letter. I had made a formal application to the Transcontinental Pool for the Grand Army rates and privileges for us if we wished to avail ourselves of them. That was all. The pool disbanded without reaching action on my application.

I then enlisted the services of a friend, Past Commander-in-chief Vanderwort, of the G. A. R., who is Special Agent of the Union Pacific Railway, in our behalf, and through him the rate and privilege was granted us provided we would hold our meeting the last week in July, and which would certainly be the best time as you will see later on. Enclosed is the guarantee the railroads made, and the Southern Pacific and Northern Pacific have endorsed it.

My previous circular gave you information with regard to rates from other points. The rate has not been definitely fixed east of points represented by St. Paul, Chicago, St. Louis, New Orleans, etc., beyond the fact that they will not exceed half fare. When I sent you the last circular, it was suggested to me by all of the Committee of Arrangements except the Chairman, that I should send it out *officially* as Secretary; but, as what I had done had been simply as a member, with no personal end in view, I did not do so. I only sought to place information before you and was not anxious to parade my official title before you. The Chairman of the Committee hastened to inform you that it was your duty to address all correspondence on a subject he had not given you any information about, to him, as Chairman. You were requested not to "hamper the committee by giving a premature decision." As the Committee had not taken any action in the matter except that a majority of them had declared in favor of going to California, I suspect that if that postal had read, "Do not hamper the *Chairman* who desires we shall meet in Chicago," it would have stated the fact in the case a little plainer. In my former circular I stated that the California Dental Societies had invited us cordially. See accompanying circular for the several invitations.

In response to my circular of inquiry, every officer of the Association but one has replied favorably, and that one admits that "there is no doubt that we should have a large meeting." I gave you extracts from the letters of the others in my last circular. Six of the nine Executive Committee are in favor, and only one is understood to be decidedly opposed. Two of the three Committee of Arrangements are decidedly in favor. All of the Chairmen of Sections but one will be at San Francisco if we go, and that one is not quite certain yet about going, but he is decidedly opposed to Chicago. At Minneapolis half of the Chairmen of Sections were absent. Nearly one hundred members have declared in favor of California. At Minneapolis only fifty-six old members were present. About one hundred and fifty dentists, who will all be members at San Francisco, have already declared they shall be present, and every mail is swelling the number. Read what some of the members write in letters received since my last circular. Secretary Harlan writes, "I am in favor of San Francisco if the larger number desire. *I am not in favor of Chicago this year.*" Treasurer Keeley writes, "Had we known all the facts when at Minneapolis, three-fourths of the members would have voted for San Francisco. We should not lose this opportunity." Dr. Keeley is not in favor of Chicago at all. Dr. Thompson, of Executive Committee, writes, "I am opposed to Chicago, and in favor of California. Hope a good Kansas delegation will attend, as is most likely." Dr. Frederichs, of Executive Committee, writes, "If we are to be the National Dental Association of this country, we should not be confined to any part of this Union in our

meetings, but must take in the whole country. I do not see why anyone should object to our meeting in California. I think it will prove a big thing for us to meet there." Dr. Darby writes, "Put me down as in favor of San Francisco. A great many dentists who are not in the habit of attending will avail themselves of this opportunity." Dr. Stockton writes, "I am in favor of San Francisco." Dr. Newby, of St. Louis, writes, "Without a single exception, every dentist with whom I have spoken has favored San Francisco." President Barrett writes, "A National Society should represent the whole nation. Our Pacific States should be brought into the American Dental Association." Dr. Bodecker writes, "Count me in for San Francisco." Drs. Butler, Bill and Horton, of Cleveland, all write, "I favor San Francisco." Dr. Noble, of Washington, writes, "The feeling this way is unanimous for San Francisco. There will be five or six new delegates from here." Dr. H. W. Morgan writes, "You may record my vote in favor of the meeting on the Pacific Coast. I cannot go myself, but I do not desire to be in the way of others who can. Feel sure you will have an interesting trip." Dr. Fuller writes, "I hope the Association will meet in California." Dr. Cook writes, "Heartily approve of holding meeting in San Francisco." Dr. Leiter, "I say Amen! to the California meeting." Dr. Mariner, "Would prefer San Francisco to any place on this continent." Dr. Gaylord, "By all means *let's go*." Dr. Patten, "I am for San Francisco to a man." Dr. A. E. Brown, of Chicago, "The proposition fully meets with my approval." Dr. Martin, Chicago, "Would like the California meeting better than any other." Dr. Harroun, "Never banked money that paid me so good interest as my trip to California." Dr. Knepper, "Heartily in favor." Dr. Moore, Dakota, "Go! it will be a grand trip." Dr. Case, "To hold the meeting at San Francisco will be the correct thing on general principles. No doubt it will meet with the success it deserves." Dr. Field "prefers San Francisco." Dr. Holmes, "Think it due the dentists of the Pacific Coast that the American Dental Association should meet there." Dr. Doud writes, "I favor San Francisco." Dr. Brackett writes, "The plan you present has great merit, in that it would contribute to make the Association more truly a National body." Dr. Parmly Brown, "I am in favor of California if the majority wish it." Dr. Gilmer, "The selection of San Francisco would be acceptable to me." Dr. Tibbetts, "I have spoken to a number of the boys here, and they are all in favor of San Francisco." Dr. Eundonberg, "I vote for San Francisco, and my vote cannot be changed." Dr. Butler, "Am still in favor of San Francisco." Dr. Waters, "In view of the general expression I do not say nay."

Only nine or ten members have sent unfavorable responses. And so the record goes on from a much larger number of the members than the number of old members who were present at Minneapolis. Let us see what is the record from societies and States outside of the Association who will send delegates. Last year there were present from all New England only three persons. This year there will go to California not less than twenty-five, and every State in New England will send delegates. The New England Dental Association, which is next to the largest in the country, will send a large delegation. The H. Society has just elected its full quota of delegates. From eight societies in New

York come favorable reports. New Jersey is on the list. The President of the Pennsylvania Odontological and the Secretary of the State Society write earnestly in favor, and from several other societies in that State come reports of delegates. Maryland will send delegates. The District of Columbia will be well represented. Favorable letters have also come from the South, especially in South Carolina, Louisiana and Texas. Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota, Missouri, Iowa, Kansas, Nebraska, Dakota, Colorado, all will have delegates. California and Oregon, with nearly seven hundred dentists, *will have its full quota* of delegates. The reports from these distant sections are only just beginning to come in. Every dental society in the country will be furnished with credentials, and instructed as to their right to representation in our Association. Now shall we say to our members on the Pacific Coast, who have kept up their membership and paid their dues year after year, we won't go? To that great body of our profession on the Pacific Coast who want to unite with us, and who stand ready to receive us, as Dr. Atkinson says, "in a manner fully equal to that extended to us at London," we don't care for your membership? Shall we deny them the privilege of greeting and joining us, and not let them have the benefit of our counsel, but repel them? Shall we say to them "we are *not* the American Dental Association of the country; we are the American Dental Association of a particular section? Shall those of us who possibly cannot go to California be selfish enough to prevent the meeting from being held there? Many will not attend the meeting wherever held. It is hoped such will not prevent that, which in their judgment is for the best interests of the Association, being done.

It is proposed that we meet in Chicago. We have met there twice; and there are other cities, like St. Louis and others of the West, where we have been invited, that have a prior claim upon us. Besides, nearly one-half of our present members in Chicago have favored San Francisco, and are opposed to Chicago. The President and many members of the Illinois State Society have written earnestly favoring San Francisco. Some of the most prominent of our members from Chicago do not favor our meeting there this year. Among them may be mentioned Drs. Allport, Harlan, Brophy, Haskell, Talbot, Ames, Marshall, Griffin, and others. Dr. Allport writes: "As between San Francisco and Chicago, I am for the former. As between Chicago and 'Tophet,' I don't care, for with the row that will be kicked up, the temperature of the two places would be about the same." It seems to me that those who remember the unpleasant episode which occurred among the Chicago dentists at Minneapolis, it would be most unwise to meet in Chicago this year. If it is not best to go to California, let us go to St. Louis or some other western city, or to Buffalo, where we have been cordially invited, or some other eastern point. Dr. Crouse himself writes, under date of February 22: "Remember I have little personal preference, and that little is against having it in Chicago."

It is urged that by going far away from where we met last year we shall lose many of those we gained then. That is certainly not complimentary to those who joined us last year, and implies we must always meet near them. From none of our members have there come more urgent requests to go to California

than from Minnesota, when we met, and the other western States west of Illinois. The Secretary of the St. Louis Society writes: "The members of the St. Louis Dental Society will go as a body for San Francisco." Dr. Martindale, writing for Minnesota, hopes "we shall go because it will establish the fact that we have no geographical bias." Vice-President Smith, of Minneapolis, wrote they would fill one car from there. Drs. Hunt, Kulp, Wilson, and others, from Iowa, favor California; and so on all through the west, among the very ones who joined us last year.

It is proposed to have an excursion from Chicago to California after the meeting, via the Northern Pacific. Is it likely that these members and delegates from the west who want to go to San Francisco, will come away east to Chicago first and spend a week of their time there? Is it likely that the members and delegates from the northwest are coming to Chicago first? Will those from the South, from Louisiana and Texas, and who can go to California via the Southern route, come away north to Chicago to join an excursion? Besides such a scheme would not get us to California until the last of August, when vacations usually expire and we have to hurry home. I would also call your attention to the following from the circular issued by the railroads with reference to the Grand Army rates and privileges extended to us. "Excursion tickets will not be sold to go west to San Francisco *via Portland, Oregon*, and return east via either of the other routes mentioned."

Great stress has been placed upon the matter of expense to deter you from going. This is a matter which you are all mathematicians enough to calculate for yourself. The opportunity is a great one, and a man can make the expense great or small as he pleases. The hotel prices in California are about the same as in Eastern cities, say an average of \$3.50 per day, and we shall have reduced rates. If one is hurried he can make the trip in three weeks time. Four weeks or longer can be profitably employed. The last week in July will be the best time for having the meeting, because we shall then be through with our meeting and ready to participate in that grand ovation which is to be extended to the Grand Army the first week in August, and for which the State and city have secured nearly \$200,000.00 with which to entertain them. It will be such an ovation and series of receptions as has never been known on this continent, and will alone be worth the trip to California. To get out to California on an excursion the latter part of August, which is not possible at the same rates and with the same privileges as earlier, would be to find the people tired out, little interested in us, and the facilities for getting about and seeing things at the low rates, not then what they will be earlier. Certainly the months of July and August are the only ones when the great body of dentists can afford to be away from their offices. It is not hot in San Francisco at that time, for the people wear the same clothing the year round, and you will need outside garments every evening.

After a careful study of the matter, and extended correspondence, covering all sections of the country, I am convinced that it would be most wise for us to hold our next meeting in San Francisco, the last week in July. I hope no one will think there are any personal differences among the majority of the officers

and Executive Committee, who favor California for the next meeting, and the small minority who do not. We are all on the best of terms. Vote for any place you please. You are not obliged to choose either San Francisco or Chicago. In voting for a place you do not thereby commit yourself to going there any more than you have in past years. At the present date nearly a hundred members have indicated their preference for San Francisco, and there is no doubt but there will be as many delegates as last year if we meet there.

Fill out the enclosed blank postal card, and mail it as early as possible, that we may know the decision of the members. Address it to the one whom you think the proper officer to receive it.

Respectfully,

A. M. DUDLEY.

At the last moment a telegram received from the Chairman of the Invitation Committee of the San Francisco Dental Association, informs us that the dentists of the Pacific Coast are entirely unanimous in their desire to have the next session of the Association held in San Francisco.

A. M. D.

INVITATION OF THE CALIFORNIA DENTISTS.

At a meeting of a general committee representing every dental organization on the Pacific Coast, the following resolutions were adopted:

1st. WHEREAS, A wish or willingness has been communicated to us by the Executive Committee of the American Dental Association, to hold its annual meeting in San Francisco, in August next, and the meeting of that body among us is calculated to increase the professional and public regard for the character and culture of our profession; and

WHEREAS, The meeting of that national body among us will be an event in the history of our profession, long sought and earnestly desired; and

WHEREAS, The consideration of our professional ideas of a modern, theoretical and practical nature, and a comparison of them with those of the past, will be elevating, interesting and beneficial to the profession, individually and collectively, as well as to the people generally; and

WHEREAS, A visit to this State of another organization, also another element of our Eastern co-laborers and fellow-citizens, will give additional opportunities for the investigation of our domestic and social institutions, our educational facilities, as well as our commercial, agricultural and mineral advantages; therefore

Resolved, That we cordially invite the co-operation of all dental societies or associations, both State and local, that may be entitled to representation in the national Association, as well as the general profession—the people—to join us in receiving said body in a manner in keeping with the reputation of the citizens of this coast for acts of philanthropy, public spirit and generosity.

2d. WHEREAS, Communications have been received by various members of the profession, expressing a desire of the Executive Committee of the American Dental Association to fix upon San Francisco as the place for its next annual session (August, 1886); and

WHEREAS, The occasion is opportune for such a meeting here, in consideration of the inducements offered to travel, that will prevail during the convention of the Grand Army of the Republic in August of this year; and

WHEREAS, The meeting of the American Dental Association on this coast, and if possible the National Association of Dental College Faculties and Examiners, at the same time, will do much to strengthen the bonds of profession and fellowship between us and our Eastern co-laborers, as well as to elevate the professional standard in this section; therefore be it

Resolved, That the societies represented by this Committee, viz.: The California State Odontological Society, the Southern California Odontological Society, the Faculty of the Dental Department of the University of California, and the Alumni Association of the same Department, do cordially invite the American Dental Association to hold its next meeting in San Francisco.

Therefore, in accordance with the above facts, I am instructed by the said Committee to extend a most cordial invitation to the American Dental Association to hold its annual session of 1886 in this city, August next.

Hoping for a favorable response at the earliest practicable moment, I am

Very truly yours,

H. J. PLOMTEAUX, Sec'y,

General Committee on Invitation and Arrangements, 531 Sutter Street.

AN INVITATION FROM CHICAGO DENTISTS.

At a meeting of the Chicago members of the American Dental Association and of the Chicago Dental Society, called to ascertain the views of the profession, March 17th, the following resolution was adopted by a vote of twenty-seven to five:

Resolved, That it is the sense and desire of this body that the next meeting of the American Dental Association should be held in Chicago, and that we extend to the Association a most cordial and hearty invitation to meet with us.

UNION AND CENTRAL PACIFIC RAILWAYS.

The Union and Central Pacific Railways have guaranteed to Dr. Dudley, for the American Dental Association, its members, delegates and all dentists and their families desiring to attend the meeting, a rate of fifty dollars for round trip tickets from the Missouri River to San Francisco and return, going by the above route and returning by any other.

The Grand Army of the Republic have selected August 3d, 1886, at San Francisco, as a proper time to hold their Encampment. Also, the Woman's Relief Corps and Army of the Potomac. The Knights Templar, after careful consideration, selected August, 1886, as a proper time for holding their Conclave at San Francisco.

August is the fruit and flower season, and the time when the Pacific Coast is at its best, and the occasion is one that will never be duplicated in this country. Should the Association conclude to go to San Francisco to hold their Convention of 1886, we can assure all concerned that the railway lines west of the Missouri River will do everything in their power to make their trip and visit to the Pacific Coast as pleasant as it can be made.

The Dental Association, if numbers enough go, will be run through on special train, such stops being made as will give them the best views of the country

through which they travel, and accompanied by employees of our road, who will do everything to assist in making their trip pleasant.

M. T. DENNIS,

New England Agt., Boston, Mass.

J. W. MORSE,

Gen. Pass. Agt.,

Omaha, Neb.

MISSOURI DENTAL COLLEGE.

The twentieth annual commencement of the Missouri Dental College was held, in connection with that of the St. Louis Medical College, at Memorial Hall, St. Louis, Mo., on Thursday evening, March 4, 1886.

The address to the graduates was delivered by H. H. Mudd, M. D., the valedictory by Prof. W. L. Fischel.

The number of matriculants for the session was twenty-eight.

The degree of D. D. S. was conferred by the dean, Prof. Henry H. Mudd, M. D., upon the following graduates:

Henry Louis McKellops, Missouri.

Charles Summa, Missouri.

Thomas E. Heatherly, Illinois.

William Way Hart, Illinois.

Alexander S. Holstead, Illinois.

George Larkin Mock, Missouri.

Reinhart Rembe, Missouri.

Arthur Jay McDonald, Missouri.

S. H. FULLER, Secretary of Faculty.

NEW YORK COLLEGE OF DENTISTRY.

The twentieth commencement exercises of the New York College of Dentistry were held in Chickering Hall. Professor F. Leroy Satterlee announced that during the year 179 students had been connected with the College. M. McN. Walsh, president of the Board of Trustees, conferred the degrees, and the prizes were awarded. The first prize, a gold medal, was given to John I. Hart. The second, a silver medal, was awarded to Charles H. Bush. Alfred Berghammer and Furman Clayton received the third and fourth prizes respectively. The valedictory address was delivered by Edmund E. Minner, and the address to the graduates by F. F. Van Derveer. The following are the graduates:

Atkinson, C. B.

Bornschein, E.

Berghammer, A.

Betting, H. N.

Bowman, S. J.

Bush, C. A.

Brenan, W. J.

Barr, V. G.

Burt, E.

Clayton, F.

Clegg, J. C.

Coon, W. W.

Coen, G. D.

Crandall, A. McC.

Chamberlain, F. C.

Davis, E. C.

Engel, Lewis

Frost, E. D.

Heath, W. F.

Hart, J. I.

Henry, C. De W.

Heinsdmann, F., Jr.

Jenkins, E. P.

Kenzel, W. H., Jr.

Keppy, F. B.

Koch, George

Knapp, I. W.

Lynch, J. C.

Minner, E. E.

Maynard, F. J.

Manville, G. P.

Myrick, F. A.

Onderdonk, T. W.

Palmer, B. B.

Slack, W. M.

Smith, S. E. E. C. K.

Schreiber, G. J.

Sanders, G. C.

Somers, L.

Sandhusen, G.

Stuart, L. E.

Siqveland, P. S. F. M.

Schell, F. M.

Sturridge, E.

Stewart, R.

Taylor, A. Jr.,

Treadwell, T. C.

Vogt, E. S.

Vinson, J. S.

Whaley, J. C.

KANSAS CITY DENTAL COLLEGE.

The seventeenth annual commencement exercises of the Kansas City Medical and Dental College were held at Music Hall, in that place, Tuesday evening March 16th, 1886. The list of matriculants and graduates in the Dental Department is as follows:

MATRICULANTS.

S. S. Noble, Montrose, Penna.	W. F. Woodry, Solomon, Ks.
J. W. Heckler, Scio, Ohio.	W. A. McCarter, Warsaw, Ind.
G. W. Earle, Tacoma, W. T.	E. S. Sweet, Springfield, Mo.
J. J. Austumell, Herman, Mo.	R. V. Anderson, Kansas City, Mo.
W. C. Love, Newton, Ks.	W. H. Radford, Kansas City, Mo.
J. N. Chipley, Colorado	J. H. Parsons, Evanston, Ill.
W. H. Rosenberg, California	M. Tullis, Great Bend, Ks.

Robert Lawrence, Ks.

GRADUATES.

J. N. Chipley, Colorado	M. Tullis, Kansas.
	J. D. PATTERSON, Secretary.

BALTIMORE COLLEGE OF DENTAL SURGERY.

The forty-sixth annual commencement was held Saturday, March 6, 1886, at the Academy of Music, Baltimore, Md.

The number of matriculants for the session was 102, the number of graduates was 43.

The following is a list of those graduating:

Ashbrook, Abraham L.	Farley, Jas. P.	Mitchell, John W.
Baker, Geo. W., Jr.	Foley, J. William,	Orrison, J. Edgar
Baynes, Harry F.	Gregg, J. F.	Ovenshire, Jas. M.
Burghard, August	Hendrickson, J. Eayre	Payne, L. Ernest
Bradsher, Charles W.	Hill, E.	Pearson, Albert A.
Brown, Walter F.	Hobson, Bolling	Patterson, J. F.
Bryant, Emory A.	Hubbell, Silas,	Pinney, Worthington
Cappel, Currey	Houston, S. H., A. B.	Russell, Robert S.
Carroll, Howard H.	Johnson, H. Herbert	St. Clair, Robert Owen
Colardeau, Chas. E.	Joyner, Henry A.	Starr, Robt. W.
Colding, Henry S., M. E.	Keller, Geo. Charles	Stiff, Frank W.
Covode, R. G.	Laubach, Chas. C.	Summerlin, Algarine T.
Downey, Wallace M.	Lindsley, A. C.	VanKirk, Thos. Campbell
Dulaney, Winfield B.	Marshall, Robt. H.	Weaver, Wm. H., A. B.
		Wright, W. Budington.

CENTRAL DENTAL ASSOCIATION OF NORTHERN NEW JERSEY.

At the annual meeting of the Central Dental Association of Northern New Jersey, Feb. 15, 1886, the following officers were elected:

President—Dr. B. F. Luckey, Paterson.

Vice-President—Dr. Geo. E. Adams, South Orange.

Secretary—Dr. James G. Palmer, New Brunswick.

Treasurer—Dr. Chas. A. Meeker, Newark.

EXECUTIVE COMMITTEE.

Dr. S. C. G. Watkins, Montclair, Dr. W. P. Richards, Orange,
 Dr. Harvey Iredell, New Brunswick, Dr. Oscar Adelberg, Elizabeth,
 Dr. C. F. Holbrook, Newark.

Beginning with the month of April, the meetings will be held regularly in Newark.

This society was organized in February, 1880, and is entering upon its sixth year, in a healthy and flourishing condition. It is the only local society of dentists in the State, and numbers among its members the leading gentlemen of the profession. Heretofore its meetings have been held from office to office, as has been the rule in other societies. It has recently been decided to make Newark the place of meeting, as being the most central location, and the Board of Trade rooms, corner of Market and Broad streets, have been secured for the regular monthly meeting. The evening of meeting is the third Monday of each month, except July and August. We are always glad to see members of the profession from other States, and hope that this article coming to the notice of those in our own State, who are not members, will lead them to attend our meetings and see for themselves.

JAMES G. PALMER, Secretary.

VERMONT STATE DENTAL SOCIETY.

The tenth annual meeting was held at Bellows Falls, commencing March 17th, and continuing three days. The following is a list of officers for the ensuing year:

President—J. P. Parker, Bellows Falls.

First Vice-President—E. E. McGovern, Vergennes.

Second Vice-President—W. H. Spencer, Poultney.

Secretary—Thos. Maund, Rutland.

Treasurer—James Lewis, Burlington.

Executive Committee—W. S. Curtis, E. S. Tracy, C. G. Campbell.

Next meeting to be held in Burlington, the third Wednesday in March, 1887.

THOS. MAUND, Secretary.

DENTAL SOCIETY OF THE STATE OF NEW YORK.

The above society will hold its 18th annual meeting at Albany, Wednesday and Thursday, May 12th and 13th. The sessions will begin at ten o'clock of the first day.

The Board of Censors will meet at the same place, Tuesday, May 11th. Candidates for examination for the diploma of the society and the degree of M. D. S., may obtain full information in regard to subjects and conditions of Dr. Frank French, Secretary of the Board, Rochester.

J. EDW. LINE, *Rec. Sec.*

FIFTH DISTRICT DENTAL SOCIETY.

The Fifth District Dental Society of the State of New York will hold its eighteenth annual meeting at Rome, N. Y., Tuesday and Wednesday, April 13th and 14th, 1886.

Members of the profession from other societies are invited to attend and take part in the discussions.

C. J. PETERS, D. D. S., Secretary.

KANSAS STATE DENTAL ASSOCIATION.

The fifteenth annual meeting of the Kansas State Dental Association will convene at Topeka, on Tuesday, May 4th, continuing three days. This meeting will be made the most interesting and profitable one in the history of the Association. Members of the profession in other States are cordially invited to be present. Topeka is easy of access, and has excellent hotel accommodations.

C. B. REID, Secretary, Topeka, Kan.

ILLINOIS STATE DENTAL SOCIETY.

The twenty-second annual meeting will be held at Rock Island, Ill., beginning Tuesday, May 11, 1886, and continuing four days.

Dentists in this and adjoining States are cordially invited to attend.

J. W. WASSALL, Secretary,
208 Dearborn Ave., Chicago.

A GENERAL SLAUGHTER.

Nineteen persons out of twenty have crowded teeth at the age of twelve, thirteen or fourteen. I do not mean irregularity, but such a condition as would impede a thread or quill toothpick if the attempt is made to pass it between the teeth from crown-top to gum. Such a condition is a frightful source of decay. Contact is bad, but pressure is fatal.

If all children and young people had healthy habits of diet and employment, the conditions named would hardly count. We must take these conditions as we find them, and obviate their bad consequences if possible.

The process is very simple. Extract four teeth at about the thirteenth year. If all the teeth are sound, select the bicuspid or the first molars. Choose between sound and decayed or imperfect teeth, and select the latter. Make a space thus of the width of one tooth at about the location of the second bicuspid in each jaw. This space will be filled in two or three years by all the teeth moving towards it. Thus you give freedom to the incisors. Room, boys; room for all the teeth.

This brief article, which has been quoted by some journals, is more completely crowded with false teaching than ever was a mouth with teeth. That extraction may sometimes be demanded when, through inheritance or imperfect development, there is not room for the teeth, is patent to even the blindest dental mole, but to teach that teeth should be extracted from every child indiscriminately is doctrine that can come from no one who entertains more than one idea at a time. Mastication can never be perfectly performed upon isolated teeth, and proper mastication of the food is the peculiar office of those organs. If the Creator had made man after the image of some of our dental impracticables, what a creature he would have constructed.

THE DENTAL SECTION OF THE INTERNATIONAL MEDICAL CONGRESS.

The following resolution was adopted at the January meeting of the Chicago Dental Society, and the corresponding secretary instructed to transmit a copy to *THE INDEPENDENT PRACTITIONER* for publication:

“*Resolved*, That this Society endorses the action of the conference at Buffalo regarding the International Medical Congress. The action is embodied in the following resolution:

“ *Resolved*. That we as members of the dental profession deem it inexpedient to recommend the organization of a Section of Dental and Oral Surgery in the International Medical Congress of 1887, under the present circumstances.”

P. J. KESTER, Corresponding Secretary.

DENTAL JOURNALS WANTED.

Cash will be paid for the following numbers of dental journals, or an exchange will be made with those who desire to complete their own files:

THE DENTAL REGISTER:

Vols. III. and VI., complete.

Vol. XXXVI., No. 1.

AMERICAN JOURNAL OF DENTAL SCIENCE (Third Series):

Vol. II., Nos. 3, 4, 5, 6, 7, 8, 10.

“ V., Nos. 3, 7, 11.

“ VI., Nos. 2, 3, 5, 7, 10.

“ VII., Nos. 2, 3, 7, 9.

“ VIII., Nos. 6, 7, 10.

“ XV., Nos. 3, 4.

“ XVI., Nos. 1, 2, 3, 4, 5, 6, 7.

MISSOURI DENTAL JOURNAL:

Vol. I., Nos. 2, 3, 10.

“ V., Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11.

SOUTHERN DENTAL JOURNAL:

Vol. I., No. 3.

W. C. BARRETT.

AN ITEM.

At the request of Dr. Francis, to whom I happened to mention the matter in a recent conversation, allow me to say that in dressing cases of pyorrhœa alveolaris I apply the aromatic sulphuric acid or other medicament on a fragment of Japanese bibulous-paper wrapped around a rather coarse “nerve-plugger,” the point of which, for an inch or so, has been waxed. My wax is alloyed with a little resin, which improves it for this purpose, or for use on silk floss, as it is made a little more tenacious. The wax protects the steel from erosion and prevents the paper from slipping from the instrument. The instrument, thus armed, is not only excellent for medicating, but is quite effective in removing bits of dislodged concretions.

J. S. LATIMER, D. D. S.

THE JOURNAL OF THE BRITISH DENTAL ASSOCIATION says that Mr. Turlington, of Dublin, recently swallowed three false teeth. They stuck in the esophagus about an inch or so down, and an operation was subsequently performed with the view of removing them, but Mr. Turlington has since died.

Frequent instances are given in the medical journals of the dislodgment and swallowing of partial artificial dentures. In some cases these result in death, while in others they are removed by various means. Dentists should always caution patients wearing them to remove them at night. Neglect of this may have a fatal result.

A SENSATIONAL CASE has been on trial in New York City, in which a lady brings suit against a dentist for \$50,000 damages for injuries alleged to be due to mercurial poisoning from a red rubber plate. It appears that a considerable portion of one side of the face has been eaten away by some kind of an ulcer or tumor, which originated near an excoriation caused by the rubber plate, and a number of Cheap John dentists pronounced it due to "mercuric sulphide" in the plate. One dentist, who advertises sets of teeth for \$6.00, who was called we suppose as an "expert," testified that "the mercury oozes out and softens the bone and the tissues of the roof of the mouth, and causes salivation, and the breaking away of the bone." The physicians generally were of the opinion that an "alveolar abscess" was the effect of the undue pressure of the plate. The defendant testified that he had for twelve years turned out on an average forty sets of teeth a week, the general price being fifteen dollars a set. The jury were unable to agree, standing eleven for the plaintiff and one for the defendant.

DR. KOHN, according to the *Medical Review*, relates a case of a melancholic patient with suicidal tendencies who, in the hope of ending her life, swallowed three large spoons, each seven inches long and with a bowl about an inch and a half wide. They were all passed from the rectum, lying together, the convexity of one bowl fitting into the concavity of the other, and surrounded by a mass of fecal matter of considerable consistency. The passage of these bodies had exerted a mild peritonitis at first, and later an attack of diarrhœa, but these disturbances speedily subsided and no trouble was experienced after the spoons had been passed from the bowel. This case is almost unique, considering the large size of the spoons and the comparatively sharp edges of the bowls.

SIR SPENCER WELLS relates an early personal experience which has in it a lesson for every professional man. In the absence of the family physician, Dr. Braithwaite, he was called upon to visit a girl who was found lying unconscious in bed. Not knowing what to do he gave brandy and water as a stimulant. When Dr. Braithwaite arrived he ordered two teaspoonfuls more to be given, but when alone in the consultation with Mr. Wells, he said: "It was very wrong to give her brandy and water. This is the first stage of some eruptive fever. But a spoonful will not make any perceptible difference, and it will convince the family that I do not differ from you. If I had," he added with a smile, "perhaps they would not believe either of us."

JOHN WILLIAM BLAKE was summoned before the Sheffield (England) Police Court on the 22d ult., by the British Dental Association. He was charged with using the title "dentist" in certain advertisements on his premises, he not being registered in the Dentists' Register. For the defense it was contended that Blake was a graduate (D. D. S.) of an American Dental College, and his diploma was produced; that he had never professed to be other than a graduate of that college, and had not represented himself as a dentist registered in England. The qualification of the American Dental College is not recognized by the General Medical Council, and the court held that the defendant had infringed the act, and fined him £5, with costs.—*Dental Record*.

A LOUISVILLE MEDICAL NEWS correspondent sends that journal a communication in which those who are opposed to the revolutionary proceedings in the American Medical Association at New Orleans last year, and who decline to endorse the present management of the Medical Congress of 1887, are branded as wide-mouthed sore-heads, monkeys, parrots, wild asses, kangaroos, and skunks, and in which the assertion is made that "this noise and din about the Congress is but the expression of disappointed ambition on the part of a few conceited orang-outangs." Truly medical men are in a nice state of feeling over the Congress.

DR. AUSTIN FLINT, SEN., died at his home in New York, of Cerebral Apoplexy, March 13th. Dr. Flint was one of the founders of the Medical Department of the University of Buffalo, and for some years was its Professor of the Practice of Medicine. Removing from Buffalo to New York City, he assumed the same chair in the Bellevue Hospital Medical College, which he held to the time of his death. His "Treatise upon the Practice of Medicine" has reached its seventh edition. At the time of his death he was President-elect of the International Medical Congress which proposes to hold its next meeting in America.

BY EXPERIMENTS made at the Bavarian Museum, a very simple and effective method of bleaching bones, to give them the appearance of ivory, has been discovered. After digesting the bones with ether or benzine to recover the fat, they are thoroughly dried and immersed in a solution of phosphoric acid and water, containing one per cent. of phosphoric anhydride. After a few hours they are removed from the solution, washed in water and dried, when they will appear as above.—*Popular Science News*.

A DEPARTMENT OF PHARMACY has been established in the University of Buffalo. The faculty will consist of Rudolph A. Witthaus, A. M., M. D., Professor of Pharmaceutical Chemistry. E. V. Stoddard, A. M., M. D., Professor of Materia Medica. Willis G. Gregory, M. D., Professor of Pharmacy. David S. Kellicott, Ph. D., Professor of Botany. Frank P. Vandenberg, M. D., Professor of General and Inorganic Chemistry.

THE JOURNAL OF THE BRITISH DENTAL ASSOCIATION for February contains a review of the transactions of the American Dental Association for 1885, in which some of the papers are severely criticised. It would be well if every member could read the notice, for the criticisms are, in the main, quite fair and disinterested. Such honest strictures may be made of infinitely greater benefit than the indiscriminate praise which tickles the ear.

THE AMERICAN MEDICAL ASSOCIATION will hold its thirty-seventh annual session at St. Louis, Mo., on Tuesday, Wednesday, Thursday and Friday, May 4, 5, 6 and 7, 1886. The proceedings of the last meeting at New Orleans plunged the profession of medicine into discord and contention. It is to be hoped that the coming meeting will do something toward healing the disagreements.

MRS. DR. T. T. MOORE, of Columbia, South Carolina, was seriously injured by being thrown from her carriage, March 19th, but is slowly recovering.

DR. BAXTER, of Toronto, Canada, says: The genial compatibility of Listerine with so many standard remedies of the *materia medica* gives it a very wide range of applicability in the treatment of that large class of cases benefited, relieved, and cured by the antiseptic treatment. It is the most elegant mouth wash I have ever used, and for dental use must prove invaluable.

THE BRITISH DENTAL ASSOCIATION which was organized in 1879, has about 600 members. The American Dental Association, organized in 1859, has only about half as many. The former society is the legal organization of Great Britain, and assumes the government of the profession. The latter is purely a voluntary association, and is scientific or nothing.

DR. N. S. JENKINS, who for the past twenty years has been practicing dentistry in Dresden, Germany, has been decorated with the Grand Cross of the Order of Albert (an honor of the first class), by the King of Saxony.

It is a well merited tribute, and we congratulate the doctor that his worth has received such a Royal recognition.

CLAUDE BERNARD, the famous physiologist, needs no monument to perpetuate his fame. Yet it is gratifying to know that the great French experimentalist is duly appreciated, and that the inauguration of a statue of him took place at the College de France on the 7th of February.

EDWARD ROWAN & Co., have removed their dental depot to No. 1048 Third Avenue, New York City, where they have increased facilities for supplying dentists with their specialties, as well as with standard dental goods.

MR. T. CHARTERS WHITE is the newly elected President of the Odontological Society of Great Britain. He is well known as a histologist and microscopist. Dr. W. St. George Elliott was elected Senior Councillor.

DR. J. H. SPAULDING, recently of Minneapolis, Minn., has removed to Paris, where he is associated with Dr. John W. Crane in the practice of dentistry. His address is 41 Boulevard des Capucines.

IN PREPARING ANATOMICAL SPECIMENS for microscopical study, the tissues, if dipped in melted bayberry tallow, are firmer and can be shaved in thinner sections than where wax, or paraffine is used.

THE LYONS MEDICALE reports the case of a still-born child which, by artificial respiration, was resuscitated forty-five minutes after birth, although there were previously no signs of life whatever.

R. I. PEARSON & Co., Kansas City, have moved their dental depot to new and more commodious quarters. They will henceforth be found on the ground floor of 210 West Ninth street.

"WHAT are the last teeth to come?" asked a teacher of physiology of his class. "False teeth, sir," came from the fellow at the foot.

PASTEUR did not make such an astounding discovery after all. Lots of men have been accustomed to take in the morning "a hair of the dog that had bitten him" the night before.

DR. MAGITOT, whose name is so familiar to students of dental anatomy and to the profession of America, has been elected Vice-President of the Anthropological Society of Paris.

DR. WILHELM HERBST, the originator of the Herbst method for filling teeth, will probably visit this country and attend the meeting of the American Dental Association, if it is held in San Francisco.

DR. GEORGE WATT is at times exceedingly sententious. Here is one of his epigrammatical sayings: "Only good comes from agitation. It is the pool, not the rill, that becomes offensive and putrid."

MR. J. H. BATES has purchased the advertising agency of S. M. Pettingill & Co., for forty years successfully conducted, and it will henceforth be merged in the advertising business of Mr. Bates.

FRIENDS of the National Dental Hospital and College of London have presented Oakley Coles, who has so long been connected with it, a silver inkstand and a pair of candlesticks.

A ST. LOUIS PHYSICIAN cured a case of alcoholism by prescribing opium. He then cured the opium habit by giving cocaine. He is now searching for a cure for the cocaine habit.

DR. G. C. DABOLL, formerly of Buffalo, is permanently located at No. 14 Rue de l'Opera, Paris, as may be learned by referring to his card in the advertising pages.

IT IS ANNOUNCED that the third volume of the Medical History of the War of the Rebellion is nearly completed, and will soon be issued from the press.

CONFUCIUS very wisely said: What we know, to know that we know it; what we do not know, to know that we do not know it; this is knowledge.

THE ALABAMA STATE DENTAL ASSOCIATION will meet in Montgomery, Alabama, Tuesday, April 13th, and remain in session for four days.

THE CONNECTICUT VALLEY DENTAL SOCIETY will hold its next meeting in Hartford, Conn., June 10th and 11th.

THE UNIVERSITY of Heidelberg will celebrate its 500th anniversary in August of this year.

PROF. OGDEN DOREMUS reports a second case of fatal poisoning from the local use of cocaine.

DR. GEO. L. FIELD and wife, of Detroit, have been visiting Hot Springs, Arkansas.

"PREVENTIVE MEDICINE."

PROPHYLACTIC, ANTISEPTIC, DISINFECTANT,
LISTERINE
NON-TOXIC, NON-IRRITANT, NON-ESCHAROTIC

These properties added to the absolute safety of Listerine, its agreeable character and uniform strength, concentrates into this preparation every requisite of a perfect Prophylactic, and gives it undoubted superiority over all other Antiseptics, especially for internal use. The well-known therapy of the several ingredients of Listerine confirms its claims for more than merely mechanical germicidal properties.

Formula.—LISTERINE is the *essential Antiseptic* constituent of Thyme, Eucalyptus, Baptisia Gaultheria and Mentha Arvensis in combination. Each *fluid drachm* also contains *two grains of refined and purified Benzo-Boracic Acid*.

Dose.—One teaspoonful *three or more times a day* (as indicated). As a local application to ulcers, wounds and abscesses, or as a gargle, mouth-wash, inhalant or injection, it can be used *ad libitum*, diluted as desired.

The universal commendation of LISTERINE by Physicians and Scientists of all Schools throughout the United States, after five years' thorough Clinical Experience, has fully established its value in PHTHISIS, DYSPEPSIA, DIPHTHERIA, CATARRH, DYSENTERY, SCARLATINA, SMALL-POX, ERYSIPELAS, TYPHOID and other FEVERS; and as the most grateful and pleasant disinfectant and prophylactic for VAGINAL INJECTIONS in OBSTETRICS, LEUCORRHEA, GONORRHEA, and, notably, for the hands, after Surgical and Gynæcological Operations.

This accumulated evidence of merit indicates its special adaptability to

DENTAL PRACTICE.

The testimony of its value in the treatment of ORAL DISEASES, in Dental Practice, is set forth in a special pamphlet on that subject to be obtained gratis on application, together with many Valuable Clinical Notes and Reprints by Eminent Surgical, Medical and Dental Authors.

Three Reprinted Lectures on CHRONIC NASAL CATARRH. (illustrated by forty good cuts,) by Prof. GEORGE M. LEFFERTS, M. D., New York City, are now ready for delivery, free of cost, to those who mention this Journal in making application.

LAMBERT PHARMACAL CO.,

New Office and Laboratory. - 116 Olive Street, ST. LOUIS.

SUBSCRIBE FOR THE
ARCHIVES OF PEDIATRICS
A MONTHLY JOURNAL DEVOTED
TO THE
DISEASES OF INFANTS AND CHILDREN.

EDITED BY
WILLIAM PERRY WATSON, A. M., M. D.

Instructor in Diseases of Children in the New York Polyclinic.

THE ARCHIVES OF PEDIATRICS is the only Journal in the English language devoted exclusively to the Diseases of Infants and Children.

It is especially adapted to the physician in active practice, who could not from other sources obtain the best current literature on this subject without great expense of time and labor, and an annual outlay of several hundred dollars.

Arrangements have been made with various eminent specialists for scientific articles on the different branches of Pediatrics.

During 1886 Dr. De Forest Willard, of Philadelphia, will contribute a series of articles on THE SURGERY OF THE GENITO-URINARY SYSTEM IN THE YOUNG.

Each number contains sixty-four pages, making at the end of the year a volume of 768 pages, which will form an invaluable "Encyclopedia of Pediatrics."

A strict supervision is kept over the advertising pages, and nothing is admitted to this Journal but what is germane to the physician's use.

SUBSCRIPTION PRICE \$3.00 A YEAR, IN ADVANCE.
SPECIMEN COPY SENT ON APPLICATION.

JOHN E. POTTER & Co, Publishers,
4-6-X-1/2 617 Sansom Street, Philadelphia, Pa.

J. R. MICHAEL'S PREPARED DENTAL FLOSS

Is the best and purest Silk Floss in use. It is full size and length—12 yards to the spool. Delivered free to any part of the United States.

For one dozen J. R. Michael's Prepared Dental
Floss, - - 84 cents.

Address,

J. R. MICHAEL,
STEWART BUILDING, N. Y. City.

11-5-1/6-1/4

TO DENTISTS.

A GRADUATE of the Philadelphia Dental College would like a partnership with an established practitioner, or will work for a good salary. Can work the Sheffield Crown and Bridge System. Has no cash to invest, but will make it a good thing for the right man.

Address,

GRADUATE,
Care of the Editor Independent Practitioner,
Buffalo, N. Y.

DR. G. C. DABOLL

Desires to inform his professional friends that he is permanently located at

NO. 14 AVENUE DE L'OPERA, PARIS, FRANCE,

Where he will be at the service of any patients whom they may kindly refer to him.

4-6-AN4-1/4

HARDMAN'S WHITE ALLOY

Takes the place of gold for filling front, or any teeth.

PRICE, \$3.00 PER OZ.

Test for Color—Place a button of Amalgam, that has one surface polished, into a solution of 40 to 60 grs. of sulphuret of Pottassa in 1 oz. of water. Let remain 24 to 48 hours.

Test for Leakage—Fill a small glass test tube with it, just as you would a cavity in a tooth, and drop it into a bottle containing an alcoholic solution of red aniline.

This Alloy Stands These, and Any Other Tests Deemed Requisite to Perfection.

HARDMAN'S SUPERIOR AMALGAM

Surpasses all others for strength and density of texture. Use it for Crown Work, in Molars, &c.

PRICE REDUCED TO \$4.00 PER OZ.

Large discounts on both of these in quantities.

MADE AND FOR SALE BY

J. HARDMAN, MUSCATINE, IOWA.

If your depot does not keep them send to the proprietor for them.

8-4-AN- $\frac{1}{4}$

DIBBLE'S WHITE AMALGAM

A Gold Alloy. \$5.00 per ounce.

Manufactured only by

W. H. DIBBLE, MIDDLETOWN, CT.

For sale by S. S. WHITE DENTAL M'FG CO., or sent by mail by the manufacturer.

ALSO MANUFACTURER OF THE DIBBLE PLUGGER.

THE FOLLOWING TESTIMONIALS ARE RESPECTFULLY OFFERED.

Dibble at present is ahead on Amalgam.
New York, Jan. 9, 1883.

J. W. CLOWES, 667 Fifth Avenue.

I believe it to be the best article of the kind in use.

W. H. DWINELLE, M. D., 27 West 34th St., New York.

I take pleasure in recommending it as the best now known.

GEORGE H. PERINE, 74 West 50th St., New York.

Have used it three years, and it has given me better results than any other.

O. E. HILL, M. D. S., 160 Clinton St., Brooklyn, N. Y.

I am satisfied it is the best in use. I can recommend it to the profession.

C. E. GRAVES, 393 Jay Street, Brooklyn, N. Y.

It is the best I have ever used.

MILES H. DODGE, 20 E. 33d St., New York.

\$5.00 per oz. or 3 oz. for \$12.50. Sent by Mail.

3-5-AN- $\frac{1}{2}$.

"ACME GOLD FOIL."

ABSOLUTELY PURE GOLD.

After twenty years as a practical Gold Beater and Refiner of Gold and Silver, and manufacturer of Gold Leaf in various shades and qualities, I am in position to state that there is no purer quality of Gold Foil manufactured, no matter how great the reputation of others, whether domestic or foreign.

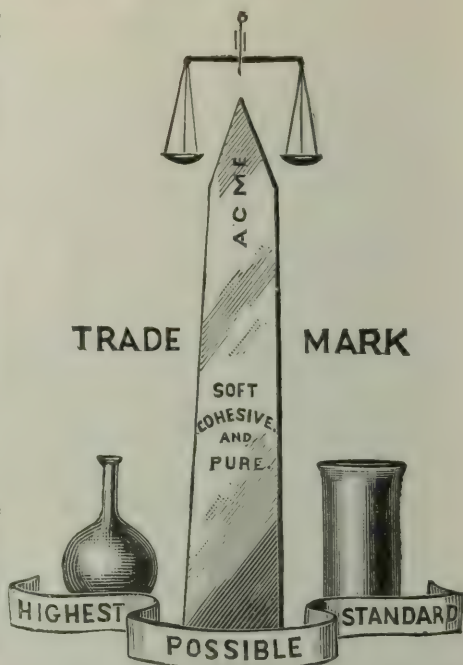


Cylinders \$30.00 per oz.; $\frac{1}{8}$ oz. \$3.75. Acme Cylinders are made from our Acme Soft Foil, which is absolutely pure. The name Acme is given to this Gold for the reason that it is as pure as it is possible for chemical agencies or human hands to produce.

Acme Soft Foil, \$28.00 per oz.; \$3.50 per book of $\frac{1}{8}$ oz.

Crystal Surface, or Corrugated Foil, softest working Foil known, \$28.00 per oz.; \$3.50 per book of $\frac{1}{8}$ oz.

Acme Folded Foil, a convenient substitute for Cohesive Foil, easy to handle and anneal, \$28.00 per oz.; \$3.50 per $\frac{1}{8}$ oz.



Appended a few of numerous Testimonials:

I think Henry's Gold the finest, *without any exception*, I ever used.

BROOKLYN, N. Y., Nov. 21, 1885.

FRANK P. ABBOTT.

ATHENÆUM, BROOKLYN, N. Y., Sept. 10, 1875.

MR. HENRY,

Will you have your agent call on me. I had a book ($\frac{1}{8}$ oz.) of your gold a long time since, and when the agent last called I told him I didn't know whether I liked it or not. Since then I found a package unopened, have used it and like it much.

Truly,

A. N. CHAPMAN.

NEW YORK, Aug. 22, 1885.

MR. T. J. HENRY,

Dear Sir,—Your agent left one book of your Corrugated Gold Foil for trial, and I would not be doing you justice without saying that it works equal to any Gold I have ever used. Please send agent with a further supply and oblige,

Yours, respectfully,

V. VAN VLECK, M. D.

284 6th Ave.

One of the many testimonials we receive almost every hour in the day:

NEW YORK, Sat., Nov 14, 1885.

Dear Sir,—Please send your man with Foil.

Yours truly,

N. M. BECKWITH,

21 West 37th St.

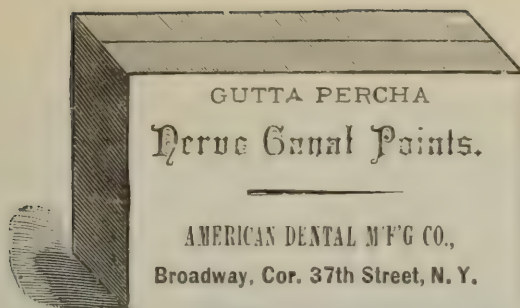
Gold will be sent free of cost to any part of the United States or Canada. Remittances must accompany all orders.

ADDRESS,

T. J. HENRY, GOLD LEAF FACTORY,
No. 16 Centre St., N. Y.

ESTABLISHED 1875.

P. S.—Dental Depots supplied at a liberal discount. Special Brands of Gold manufactured according to orders.

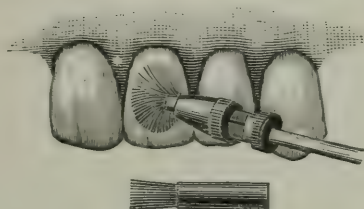


To those that have never seen or used the little Gutta-Percha Nerve Canal Points, manufactured by us for the past year and a half, we would say, that they have been well received, and extensively used by the profession generally. They are very carefully made and nicely tapered, being well adapted for the purpose for which they are intended.

The quality of Gutta-Percha from which they are made is the very best, being good and tough, permits bending in any shape, and easily worked.

PRICE PER PACKAGE OF 125 POINTS, 50 Cents.

SMALL POLISHING BRUSH.



The brush will be found very useful in cleaning teeth and finishing fillings; also in polishing the walls of cavities in preparing them for filling.

The brushes are made in three grades—soft, medium, and stiff—and adapted for use with either the Klump Port Polisher or the R. A. Port Polisher.

Price Per Dozen, 50 Cents.

Price for R. A. Port Polisher, . . . 30 Cents.

AMERICAN DENTAL MANUFACTURING COMPANY,

BROADWAY, Cor. 37th STREET,

COGSWELL'S Disk Carrier and Guard

MADE BY
CODMAN & SHURTLEFF,

167 Tremont Street,

BOSTON, MASS.

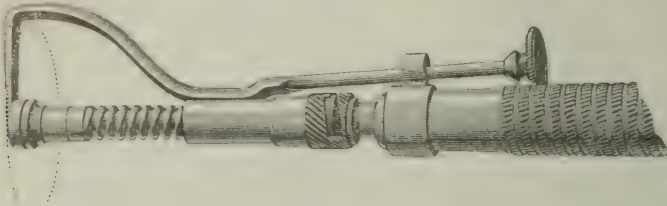


Fig. 214.

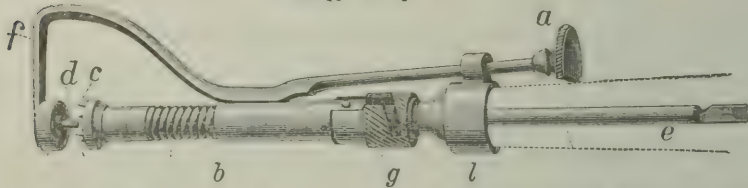


Fig. 214 A.

Patented Feb. 10, 1885.

This invention will be found indispensable by every dentist who values time, as it will enable him to attach the much used Disk to the Engine Mandrel in a small fraction of the time required by other methods.

It is represented in the figures as connected to the Hand-piece. In Figure 214 the holding device is represented as closed, the outline of Disk being indicated by circle of broken lines. In Figure 214 A, it is shown as opened by slight pressure of the thumb or finger against the knob *a*, ready to receive the disk. Upon relaxing this pressure the spring *b* closes upon the disk, which is centered upon *d*, perforated by four hardened steel points, *cc*, and thus securely held ready for rotation. The carrier is attached to the Hand-piece by insertion of the Mandrel *e*. A friction ferule *l* overcomes slight tendency of bracket *f* to rotate, and enables the operator to retain the guard opposite that portion of the disk where it will most effectually guard cheek, tongue, or other part from injury, or, prevent interference with rubber dam. At *g* is a locking sleeve, employed only when in the use of stiff disks there is a tendency to overcome pressure of spring *b*, and permit loosening of disk.

The Carrier will receive disks of $\frac{7}{8}$ inch diameter down to $\frac{3}{8}$ or even smaller. It may be rotated in either direction without loosening the disk, as occurs with the ordinary screw-held disk.

PRICE, \$2.50.

We are prepared to supply the Disk Carrier and Guard to fit the S. S. W. Hand-pieces, Nos. 5 and 6, Hodge's and Bonwill's Improved, at this price. Other Hand-pieces, if sent us, will be fitted to order at the same price, or at a moderate additional charge. **In ordering, state what Hand-piece is used.**

MESSRS. CODMAN & SHURTLEFF:

BOSTON.

Gentlemen,—The new Disk Carrier, with guard, which I have fully tested, is very satisfactory in all respects. I prefer it to any other pattern now in the market.

ISAAC J. WETHERBEE, D. D. S., Pres. B. D. C.

From J. B. Coolidge, M. D., D. D. S., Professor of Clinical Dentistry, in Boston Dental College.

MESSRS. CODMAN & SHURTLEFF:—

The new Disk Carrier which you sent me is the best. It will very soon save its cost in the time required for changing the disk. The guard will be found of great use in protecting the cheek, tongue, and rubber dam from the action of the disk. I would recommend it to every Dentist.

J. B. COOLIDGE.

From J. A. Watling, D. D. S., Professor of Operative Dentistry, Michigan University.

MESSRS. CODMAN & SHURTLEFF,

167 Tremont Street, Boston, Mass.:

Dear Sirs,—Your Disk Carrier received. After several careful trials, I feel justified in recommending it to the profession as a very useful and valuable addition to a dentist's outfit.

It is one of the best that I ever used. Is readily applied to the engine, and to replace the old disk with a new one requires but a few seconds.

The protector, while holding the disk firmly in place and being all that is necessary for the prevention of injury to the mouth, does not shut off the view of the filling to be finished.

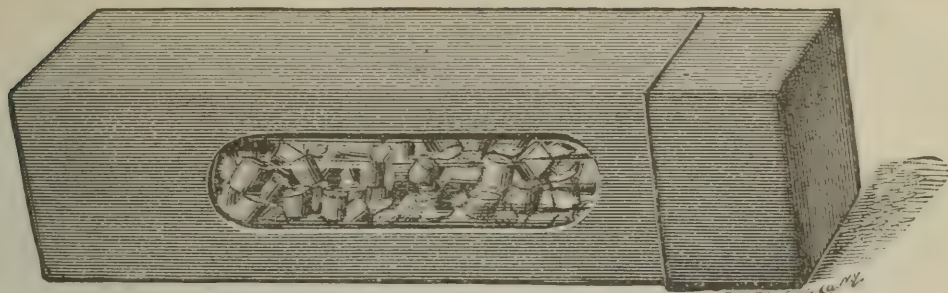
It is indeed an instrument to be desired by all careful practitioners.

1-6-an-1

Respectfully,

J. A. WATLING, D. D. S.

EXTRA PLIABLE DECIMAL GOLD ROLLS.



(This Engraving represents a Phial of size I of the above designated Gold, inclosed in a Box.)

Gold Foil and Gold Rolls, per 1-10 ounce,	-	-	-	\$3.00.	Per ounce,	\$28.00
Extra Pliable Decimal Gold Rolls, per 1-10 ounce,	-	-	-	3.50.	Per ½ ounce,	17.00
Untrimmed Foil, per 1-5 ounce book,	-	-	-	-	-	5.50
Ideal Cement, per package, with Pigments,	-	-	-	-	-	1.00
Rowan's Ideal Alloy, No. 1, per 1 oz. \$5.00, 2 ozs. \$9.00, 4 ozs.	-	-	-	-	-	16.00
Rowan's Ideal Alloy, No. 2, per 1 oz. \$3.00, 2 ozs. \$5.50, 4 ozs.,	-	-	-	-	-	10.00
Tin Foil (our make), very tough, per book,	-	-	-	-	-	.50

Try some of our "Ideal" Cement Filling and "Ideal" Alloy.

Appended are testimonials for our preparations of Gold from well-known gentlemen:

I have used the Rolled Gold of Edward Rowan & Co., and like it very much. I prefer high numbers—30, 61 and 121—for facility of adaptation to walls of cavities, capacity to bear high annealing and making solid work, I know no superior make.

October 23, 1882.

271 N. Eutaw Street.

GENTLEMEN—I have used nearly all of the last ounce of your "Extra Cohesive" Decimal Gold Foil No. 4, and it affords me pleasure to inform you that it has *proved* to be a *first-class article* in every respect. It is *cohesive* and *tough* in the *highest degree*, yet possessing *less harshness* than is usually found in cohesive foils. I cheerfully thus refer to it, and so long as you continue to make such foil, I want nothing better.

Very respectfully,

JAS. H. HARRIS, M. D., D. D. S.

Boston, Mass., June 30, 1883.

Sirs—I have used your Rolled Gold for several years. When I wish to use *cohesive* gold, I prefer your No. 30 Rolled to any gold with which I am familiar. It is very tough, soft and cohesive. In short, pleasant and easy to work, and makes a compact, even and finished filling.

Yours truly, L. D. SHEPARD,

S. H. GUILFORD, A.M., D.D.S., (Professor of Operative and Prosthetic Dentistry, Phila. Dental College.) has permitted us to state that he uses and recommends our "Gold Rolls."

DR. H. J. McKELLOPS, of St. Louis, writes us, under date September 16, 1884, "You may use my name in connection with your Gold with pleasure."

H. C. REGISTER, M. D., D. D. S., of Philadelphia, writes us, "You are permitted to use my name in recommending your Gold, as second to none in the world!"

CHAS. L. STEEL, M. D., D. D. S., of Richmond, Va. (Demonstrator Operative Dentistry, University of Maryland). DEAR SIR—Your last ounce of Gold duly received, and, as usual, works superbly. I have used many makes of Cohesive Foil, but for some time past have confined myself to yours exclusively, as I find none other so near perfection.

A. H. FULLER, M. D., D. D. S. (Professor of Operative Dentistry, Missouri Dental College). Should you so desire you may state that I have been using your Gold for the past year or more, and find it first-class in every respect. Shall send you an order in a few days for more.

WM. CARR, M. D., 35 West 46th Street, New York, permits us to state that he endorses our Golds. He uses Nos. 3 and 4 soft; No. 60 Rolled; and Gold Rolls.

EDWARD ROWAN & CO.

No. 1048 Third Avenue, S. W. Corner 62d Street, New York.

C. A. TIMME & CO. Importers of

U
C
H
O
E
H
H
H
H
N
V
E
H
O
P
E.

WOLFRAB'S
PURE
CHEMICALLY
GOLD-FOIL.

C.A.TIMME & CO.

IMPORTERS of DENTISTS SPECIALTIES

SOLE AGENTS FOR THE U. S.
190 HUDSON ST. HOBOKEN N. J.

On orders of two ounces and more at a time a reduction of 50 cents per ounce will be given.

This gold is made in reference to the HERBST method of filling teeth with the engine. It has also proven a very desirable article for the *mallet* and *hand-pressure*.

We claim it to be superior to any other make for its peculiar *softness*. It easily adapts itself to the walls of the cavity, and when properly manipulated it makes a *solid* and *cohesive filling*. If it is to be used cohesively, a slight *warming over* the flame will have the desired result.

Very good reports have been received from prominent practitioners.

Timme's Imported German Phosphate Cement, per box, \$1.00.

THE Independent Practitioner.

VOL. VII.

MAY, 1886.

No. 5.

Original Communications.

NOTE.—No paper published or to be published in another journal will be accepted for this department. All papers must be in the hands of the Editor before the first day of the month preceding that in which they are expected to appear. Extra copies will be furnished to each contributor of an accepted original article, and reprints, in pamphlet form, may be had at the cost of the paper, press-work and binding, if ordered when the manuscript is forwarded. The Editor and Publishers are not responsible for the opinions expressed by contributors. The journal is issued promptly, on the first day of each month.

SOME THOUGHTS AND EXPERIMENTS UPON EROSION.

BY EDGAR D. SWAIN, D. D. S., CHICAGO, ILL.

(Concluded from page 184.)

In my last paper upon the subject of Erosion I presented a theory borrowed from experiments made by Mr. Kincely Bridgman, for the purpose of proving that dental caries was the result of an electro-chemical process, and that the results of those experiments, repeated by myself, gave hopes of a solution of the causes producing that disease. I then promised to experiment further in this direction, and to report progress at some future time. Immediately after, I had prepared by a chemist solutions of the following acids, barely strong enough to give an acid reaction with litmus. Aiming to secure, as near as possible, the acidity detected in the oral secretions, when present at all, I procured ten small glass vessels, and cemented two teeth to the bottom of each, crowns up; also with them a piece of copper wire. These were then filled with the acid solutions, cov-

ering the teeth, so that about one-half the enamel was submerged. Each glass was then covered with a sheet of paraffine paper, tightly bound to it, to prevent evaporation and exclude the dust. These vessels were placed upon a shelf built against a chimney, warmed by a continual fire. A thermometer hanging upon the chimney varied at no time more than a few degrees from the temperature of the oral cavity (98° F.). From time to time, as necessary, the acids were tested with litmus, and replenished to preserve a medium strength and quantity. These experiments were continued from early in October to the following May, when a careful examination of the contents of each glass was made, verifying the strength of the acid solutions used, and the effect upon the teeth and wire noted.

The results were as follows:

Oxalic Acid—Strength, $\frac{1}{260}$ of one per cent. No action upon teeth or wire.

Citric Acid—Strength, $\frac{1}{130}$ of one per cent. No action.

Phosphoric Acid—Strength, $\frac{1}{130}$ of one per cent. Slight roughening of all that part of the enamel immersed. No apparent action upon the cementum. Wire slightly constricted at the line of immersion.

Lactic Acid— $\frac{1}{60}$ of one per cent. Marked groove, and softened enamel at the line of immersion.

Acetic Acid—Strength, $\frac{1}{60}$ of one per cent. No action.

Butyric Acid—Strength, $\frac{1}{30}$ of one per cent. No action.

Tannic Acid—Strength, $\frac{1}{30}$ of one per cent. No action, but a slight brownish color of cementum.

Tartaric Acid—Strength, $\frac{1}{260}$ of one per cent. No action.

Sulphuric Acid—Strength, $\frac{1}{130}$ of one per cent. Enamel roughened over its entire surface; more so beneath the liquid. Light deposit of sulphate of lime above the immersed part. Cementum softened; wire constricted at the line of immersion.

Nitric Acid—Strength, $\frac{1}{130}$ of one per cent. Enamel roughened over its entire surface. Cementum not visibly affected. Wire eroded over its entire surface, but more so just above the surface of the liquid, where in contact with the atmosphere.

Hydrochloric Acid—Strength, $\frac{1}{40}$ of one per cent. Entire enamel roughened. No apparent action upon the cementum. Wire constricted at the point of contact of liquid and atmosphere.

And just here, though foreign to the subject, I call attention to

the difference in diffusibility of the acids used, those which we consider the weakest of the acids requiring a very much larger quantity of water to reduce them to that condition represented by their action upon litmus.

The reader will remember that the results of the experiments reported in my previous essay were very marked, and were only made, as were Mr. Bridgman's, with sulphuric acid, and that of a strength far greater than those used and reported above. In fact, the strength was sufficient to assure us, not only action upon the metal used, but also upon the lime salts of the teeth.

These last experiments have had a tendency to weaken my faith in the theory that electro-chemical action is responsible for the conditions we observe upon the teeth, known as erosion. Therefore, for some years I have been continuously upon the look-out for some more plausible theory to account for this disease. I must admit, however, that I am still as deep in ignorance as ever.

As a matter of course, I have observed carefully all cases of erosion presenting themselves in my own practice, and have been greatly assisted in these observations by my brother practitioners, and I now take occasion to thank Dr. Geo. H. Cushing, of Chicago, and Dr. G. V. Black, of Jacksonville, Ills., for valuable assistance.

The close and long continued study of this affection of the teeth has brought to notice such numerous and varied conditions and effects that I am almost in despair, and the hope that what I may say will call forth the views of other observers is my only excuse for allowing these papers to appear in print. I now feel satisfied that erosion is not a result of electro-chemical action, neither is it to be attributed to mechanical forces. The use of the tooth brush cannot be a cause where it has never been employed. The uses of acid fruit, or acids with our food, sudden changes of temperature, and all the other theories of this nature must, to my mind, be abandoned, and new theories sought for.

At one time I was strongly inclined to believe that Prof. Black, in his lectures upon the causes of caries, had given me a leader in his theory of a digestive secretion, but more careful considerations of all the conditions presented have only doomed me to further disappointment.

I have carefully studied the development of the teeth, in hopes to find here a path which would lead me out of this tangled depth.

Were it a fact that the teeth were developed simultaneously, we could attribute the lines of erosion on the same plane to a defect in calcification, or a result of any disturbance causing a temporary arrest of development. A reference to the "Calcification Chart," prepared by Prof. Black, shows at once that a stable theory cannot thus be established.

Magitot believed infantile convulsions (eclampsia) to be a common cause of erosions. It seems to me, however, he must be mistaken, for the same reasons which apply to imperfect development.

Hutchinson believes syphilis to be responsible for this disease, but here again we meet the same objections, reinforced by the knowledge that syphilis is a continuous disease, and if it be inherited and the teeth afflicted thereby, it would involve the entire organ, from formation of the enamel cap to the completely developed tooth.

In fact, circumstances do not warrant us in assuming that any disease causing an arrest of development would leave the tissues in such a condition that, if a central incisor be affected across the middle of its crown horizontally, five or six years later other teeth, say the cuspids or bicuspid, would be similarly affected.

In a recent conversation with Prof. Black, he said:—"I do not consider Erosion a species of caries, as some have suggested, but do believe it to be the result of abnormal secretions, from glands situated in the lips and tongue, at the points of contact with the teeth." The lips touch most forcibly the highest point of the convexed surface of the teeth, leaving above that point of contact a pocket. The glands of the lip at point of contact may become closed, and consequently a low condition of inflammation exist, causing abnormal secretions. This, however, will not account for the disease upon the lingual surface of the superior incisors, and I have never yet seen a case of Erosion upon the lingual surface of the inferior incisors.

Erosion is probably a result of combined conditions, and we are not justified in attributing all cases to any one apparent cause. The study of this disease opens up a large field for observation, which should be developed by the young men of our profession, and followed to a successful termination.

I have consumed much space in telling what I do not know, but hope others will continue the investigations until, like "*Pyorrhœa Alveolaris*," we shall be able to successfully arrest its ravages.

A VISIT TO FOREIGN DENTAL SCHOOLS, AND OTHER OBSERVATIONS.

BY A. W. HARLAN, M. D., D. D. S., CHICAGO, ILLINOIS.

A recent visit to Europe enabled me to observe the workings of the dental schools of London, Berlin and Paris. Before describing what I saw and heard in London, a few preliminary remarks concerning requirements for admission to English dental hospitals may be useful. Applicants for entrance to British dental schools, who commenced the study of dentistry prior to 1878, are not required to pass the entrance examinations; all others must undergo a preliminary entrance examination, comprising English language, grammar and composition, English history, modern geography, Latin, including grammar and translation, elements of mathematics, vulgar and decimal fractions, algebra (simple equations), geometry including the first two books of Euclid, elementary mechanics of solids and fluids, including statics dynamics and hydrostatics, and one of the following optional subjects: Greek, French, German, Italian, or other modern language, logic, botany or elementary chemistry.

When the student has fulfilled the above requirements he is required to register himself as a dental student at the office of the General Medical Council. After such registration he must pursue his studies for four years in one of the recognized schools, including in that period an apprenticeship in mechanical dentistry under some registered dentist. Before taking his final examination for the L. D. S. degree, he must attain the age of twenty-one years. During the four years of studentship he attends lectures on general anatomy, pathology, chemistry, surgery, materia medica, physiology, and other general medical and scientific subjects in a regular medical school. He also does his dissecting, chemical and histological work, including the work of dresser or assistant in a hospital ward in the same school. Dental anatomy, physiology, surgery, mechanical and operative dentistry, special therapeutics, anæsthesia and other special subjects, are taught in the dental hospital, including practical work in operative dentistry.

Instruction in mechanical dentistry, as before mentioned, is obtained from private sources. The theory of mechanical dentistry, including carving of bone, ivory, etc., manufacture of instruments,

swaging, soldering, and the putting up of specimen cases, is taught in the dental hospital. Practical cases are not made in the dental schools of London. (I was so informed.)

On entering the Dental Hospital of London (founded 1859), situated on one side of Leicester Square, you at first find yourself in the reception room for patients (which is open daily, except Sundays, from 9 to 11 A. M.). A clerk or bookkeeper records the age, sex, residence, occupation and other facts of this nature relating to the patient, including the kind of operation which is required for his relief (filling, extracting, correction of irregularity, cleansing teeth, surgical operation, or other required service). The patient then goes up stairs, where he is received by the house surgeon or his assistant, by whom he is assigned to the student. There are always plenty of patients. If an anæsthetic is to be administered it is given by the regularly appointed anæsthetist of the school, or under his direction. He attends daily. At least one clinical instructor is present daily, who performs some operation in filling or otherwise, during his hours of service. The house surgeon and his assistant have charge of the operating rooms, and furnish the materials for filling, etc., to the student, who collects the fee. When the student gets a sheet of gold (No. 4) he pays thirty-six cents for it, and of course gets as much or more from the patient. No charges are made for plastic fillings, tin, gutta percha, or other services, except for gold, as above stated. This has a tendency to discourage the use of gold by the patient. He prefers the filling which costs nothing. The student, in consequence, does not get from this method of fees as much practical use of gold, even in twice the length of time, as he obtains in an American dental college. From what I saw I should say that very little cohesive gold is used by students in the hospital. Certainly not many large and complicated gold fillings are made by them during the two years' clinical work. They obtain a knowledge of the use of non-cohesive gold, however, which is perhaps quite as valuable in practice, because the English dentists as a class (with few exceptions) do not make, or attempt to make, large gold fillings, preferring plastics, pivoting or extraction, when cavities are large or teeth are pulpless, as they argue, from the system of fees which are in vogue, that it does not pay the operator; that people will not submit to prolonged operations, and that in many cases large gold fillings will

not prove as serviceable (through lack of care of the teeth after filling, etc.) as frequently-renewed plastic fillings.

Root filling is taught, but I fear many (at present) do not practice it with that degree of care and thoroughness which we deem essential to success. It is not considered good practice in America, I believe, to fill roots of teeth with cotton, or to leave them unfilled and drill a vent hole in the side of the root. Many dentists in Great Britain and on the continent practice in this way daily. American methods of filling teeth and roots of teeth have not taken that deep hold on the European practitioner which some theorists would gladly have one believe. Many foreign dentists—like some at home—read nearly everything that is published, but do not put into practice what in many cases would be better for their clients. They are content with the knowledge they possess, and do not easily or readily take up with new ideas. They are too conservative.

The rubber dam is used in the hospital. The gentlemanly house surgeon explained the methods of teaching, and was at considerable pains to show the *modus operandi* of ordinary operations. I think they have about one chair (not modern) for every three or four students. The operating rooms, although located on the fourth floor, are not well lighted, and are not sufficiently commodious, as there are two or three rows of chairs back from the windows. Dental engines were numerous, and many of them were in actual use. The students are not boisterous, they indulged in no loud talking, and appeared to be somewhat older than the average dental student at home.

Located in the same building is the office of the British Dental Association, and the journal of that society is issued from thence. The Odontological Society of Great Britain is also located on the lower floors, and their museum, rich in models, casts, skulls, and other valuable materials in human and comparative anatomy, is open to the student desirous of gathering knowledge. The past and present students have a society, which holds monthly meetings in the hospital, an exceedingly great advantage for the juniors. They hold annual reunions and give a dinner, to encourage social intercourse. Outside the entrance is a box for contributions for the support of the hospital. Soirées and subscription parties are also given from time to time for the support of the hospital. I

thought, in ruminating over the subject, that if small fees were collected for all plastic filling operations, the contributions which are made by the benevolent, and the other funds coming into the hospital, might be used to reduce the cost of operations in gold, and thereby benefit the student by teaching him from actual practice the better methods of operating. I do not wish to be misunderstood in the above paragraph. The student is taught the methods, but he does not have enough practice in the use of gold while he is a student. The British journals publish a list of the operations performed in the various hospitals every month, and any one can see the justice of these remarks. Here is one of the late reports :

Monthly report of cases treated at the Dental Hospital of London, from Oct. 1st to Oct. 31, 1885:

Extractions—	{ Children under 14.....	378
	{ Adults.....	912
	{ Under nitrous oxide.....	276
Gold stoppings.....		267
Other “.....		879
Advice.....		121
Irregularities of the teeth.....		97
Miscellaneous cases.....		387

National Dental Hospital—same month:

Extractions—	{ Children under 14.....	424
	{ Adults.....	555
	{ Under nitrous oxide.....	614
Gold stoppings.....		121
Other “.....		625
Advice and scaling.....		421
Irregularities of the teeth.....		409
Miscellaneous cases.....		146

Each statement is signed by the respective house surgeon. No report of roots filled, or abscesses treated, or crowns or pivot teeth adjusted. The records speak for themselves. In the report of the National Dental Hospital for the year 1885, there is a record of 9,001 fillings, of which number 1,014 were made with gold. I have not seen the report of the Dental Hospital of London for the same year, but the monthly reports of fillings average about the same. That is to say, not quite twelve gold fillings in every hundred inserted. One unconsciously gathers from this, that the in-

sertion of such a large percentage of fillings other than gold has a tendency to discourage thorough cleansing and preparation of cavities. Hence the frequent failure of plastic operations.

I visited the National Dental Hospital also, and the methods of teaching are substantially the same, the hours of attendance of patients, operators, house surgeons and clinical instructors, occupying about the same number of hours. This school is younger, and it occupies smaller quarters, but in other respects I should judge that the instruction is quite as thorough and scientific as that given in the older school. The fees are not quite as high. I found the house surgeon quite as willing to show me the working of the school as his *confrère* in Leicester Square. I visited the hospital on a rainy morning, in the company of another American dentist, and while there a discussion arose concerning the use of filling materials. The house surgeon argued that it was almost useless to insert gold fillings for the class of patients who visit infirmaries, as such people took no care of their teeth. I took the other side, or the student's side, which was that it was a benefit to him, as it taught the use of instruments, the manipulation of gold, and that he would be better prepared to operate for himself when launched into the arena of daily personal practice. The question was not settled, but I hope that I impressed him with the importance of the proposition. This is the principal observable defect in the clinical instruction of each school. If there are forty students in a school for the year, and only 1,000 fillings of gold inserted during that time, it indicates a small average in the total number of fillings for each student.

The English student is well instructed in the use of anæsthetics; much better than are Americans. He learns more of comparative anatomy than we teach, and is generally well drilled in normal and pathological histology. Dental surgery and special therapeutics, I believe, from what I saw and heard, are better understood at home, by our college-educated dentists, than by our English cousins. This is my impression from many conversations held with dentists of low and high degree. They are better mechanics in the work-shop, *en masse*, but not so ingenious or inventive. When it comes to the final examination, we must take a back seat, as the licensing bodies are not the teaching corps. When we adopt—as we must in time, and I hope very soon—that feature of professional education, then will our diplomas be like Cæsar's wife, above suspicion.

We deliver more didactic lectures in a six months course in America than an English student listens to in eighteen months. By different methods we arrive at the same result. They consume more time, but place them side by side in practice, in a working society, in the field of journalistic contributors, and our own American graduates will hold their ground quite as well as the subjects of the Queen. The amount of valuable material published in professional journals in America attests this.

The British dentist is more social, and that element in his nature almost overshadows the scientific and practical side, even in dental societies. Their method of conducting meetings of societies has much in it to commend. Members do not straggle in at all hours, after business has begun, and no talking or whispering goes on while a speaker has the floor. The business of the meeting is conducted in a dignified manner. This to some might appear dull and prosy, but it pleased me. Scientific work is no laughing matter, and for a few boisterous, ill-mannered persons to talk and laugh and whisper while a scientific paper is being read, which has required weeks or months of labor to prepare, is a poor compliment to pay to the author. Hence this decorousness impressed me more forcibly, as I have been in society meetings where attention was almost wholly diverted from the business in hand, to listen to a story or other trivial matter.

English fees are not based on anything but tradition. There is no justice to the operator in his receiving but a guinea for his maximum fee. I will not say that larger fees are not charged or collected by English dentists, but the custom for those of the highest rank is to receive about \$5 for each operation performed, be it easy or laborious. Americans practicing in Great Britain usually try to transplant American ideas, but they do not all succeed, as I heard of some who have adopted the English custom. Fees for artificial teeth are even higher than in America—and also lower—for in America no one ever heard of a dentist inserting a single tooth on rubber base for four shillings and six-pence—about \$1.10. As you descend in the grade of practitioners the fees decline also, fillings being inserted for a shilling, and artificial teeth going for a song. The custom prevails of inserting teeth over roots which are unfilled, and, as every one knows, it is a very filthy method.

Our American advertising dentists could learn a thing or two

from the sons of Albion, were they in search of such information. The marvellous things they tell in newspapers of their exploits and their own "patent" "soft," "easy-fitting" "cushions" for "tender gums," and the brushes, powders and elixirs which they have in hand, and other allurements for the money, are too numerous to mention. These charlatans are a class by themselves.

The English operating room is not as easily entered as are ours at home, except by the favored few. Our own easy good-nature and carelessness of the feelings of our patients, permits us to open our doors to nearly every caller, on the most trivial pretext. They are more careful in this respect. We ought to be.

When one enters a dental goods establishment and asks for anything new, they immediately show something from America. But by persistent questioning and keeping the eyes open, one will finally see a number of inventions and improvements on American instruments which cannot be found in America, because they are contraband. On account of the murky atmosphere in London, dentists either have to operate but few hours daily, or use artificial light. Hence there are many forms of reflectors and globes which we are unaccustomed to see. I found better nerve extractors than we can get at home; likewise syringes, explorers, files, and a number of little odds and ends which have to be picked up here and there as you see them, for, singular to relate, many of my choicest "finds" are not in catalogues or in the advertising pages of any dental journal. In conclusion, I have only to state that everywhere I was most courteously received and hospitably entertained, and if I have seen some things to criticise I have been equally unsparing of things and customs at home. In the next number of this journal I will continue my running observations.

AQUA CALCIS.

BY GEORGE J. FRIEDRICHS, M. D., D. D. S.

READ BEFORE THE NEW ORLEANS ODONTOLOGICAL SOCIETY.

My attention was attracted to the subject of Aqua Calcis by the perusal of an article entitled "Dental Nutrition," which appeared in the November, 1885, edition of the *INDEPENDENT PRACTITIONER*,

and believing that a few remarks upon this subject may not be entirely without interest to this body, I have hastily collated, for your consideration, a few facts and deductions bearing upon the matter involved.

In the above-named paper, the two following postulates were advanced :

First. "That the solution of lime faithfully administered—simple, plain lime-water—will be so decomposed and reorganized within the system as to furnish the elements necessary to harden and reconstruct poor, soft, chalky teeth."

And secondly. "That the general diet of the residents of New Orleans, with cistern water used exclusively for potable purposes, constituting an environment differing considerably from that of any other portion of the country," results "in a greater amount and degree of softened, decalcified teeth than are to be found elsewhere."

Now, in order that these assertions might have carried with them some plausible evidence of established truth, it is reasonable to presume that they ought to have been accompanied by reliable statistics, or at least fortified by the testimony of others residing in the same locality, to whom this unusual predominance of softened, decalcified teeth must have been equally apparent, and whose opportunities for investigation, both as to causes and effects, must necessarily have been equally as good. The mere dictum and observation of any one individual, no matter how well qualified he may be, cannot be supposed to counterbalance the experience and conclusions of the profession at large, unless his theories are based upon a foundation of incontrovertible evidence. In this case no such evidence has been adduced. On the other hand, after many years of experiment and discussion, quite contrary views to those announced now obtain with the best minds of the profession, and it is pretty generally accepted as an ascertained fact that neither diet nor geographical location has anything whatever to do with the formation of the teeth.

I will now relate a case in my own practice, bearing upon the question of the inferior quality of teeth, alleged to be peculiar to residents of New Orleans and its vicinity, which I present for your consideration, and from which you may draw your own conclusions.

About two years ago I was called upon by one of my patients,

bringing her little daughter with her. I saw that there was considerable anxiety felt on the part of the mother in regard to the result of my diagnosis. Upon examination, I found an unusual deposit of salivary calculus, incrusting the lower incisors to such an extent that they were apparently a solid mass of tartar; hence, the mother's anxiety, she being unable to account for what had become of the teeth which were there before. With the aid of a scaling instrument I soon demonstrated, to her delight, the real condition of affairs. The parents of the child have been residents of New Orleans for years. The child herself was born here, has subsisted solely upon city fare, and has used nothing but cistern water for potable purposes. The question here presents itself: Where did this unusual deposit of lime, which was found incrusting upon her teeth, come from? I admit that this case, as to the amount of tartar deposited, is an isolated one, and the first met with in my practice; but the deposit of tartar in a minor degree, requiring removal in order to prevent absorption and recession of the gums, is not an uncommon occurrence amongst the population here, a fact well known to every dentist practicing in the City of New Orleans, and which appears to controvert the assumption that the inhabitants of this section, in consequence of their peculiar environment, relying solely upon cistern water for drinking purposes, are peculiarly liable to a greater amount and degree of softened, decalcified teeth, than are to be found elsewhere.

I will now discuss the general theory upon which this proposition is advanced; *i. e.*, the utility of administering simple, plain lime-water in order "to harden and reconstruct poor, soft, chalky teeth." I will commence by quoting the opinion of Dr. Magitot, who asserts "that the nature of drinks used by populations play, as we have before hinted, but a secondary role, or is perhaps nil." And in the words of Prof. Truman: "The fact that hens must be occasionally fed on lime in order that shells may be formed, cannot be regarded as adding any strength to the argument in favor of lime assimilation. The shells of eggs cannot be held as organized products, and hence they bear no more relation to the hard tissues of the animal organization than a calcareous deposit in the mouth resembles the tooth upon which it is deposited. That increased density can be effected by the presentation of food containing the necessary elements, there can be no doubt, but that it can ever be accomplished

by direct administration of the inorganic, I hold to be impossible. Careful observation, through a series of years, in lime-water districts, leads to the conclusion that assimilation cannot be carried on in this way, and that it is waste of energy to do so."

Dr. W. C. Barrett, in a paper read on this subject before the American Dental Association, says: "Corroborative evidence, when looked for with biased judgment, was not lacking, and dentists had tales to relate of the most stupendous changes effected in the development of children through a judicious administration of the lactophosphate of lime to the mother during pregnancy. The instances in which such results seemed apparent were cited, while those in which no effect resulted were not included in the category, or were attributed to a want of faithfulness in taking the prescription. We believe that which we desire to believe, and there is no difficulty in finding apparent confirmatory evidence to sustain the most absurd postulates when one sets out with the determination to do so."

And again: "Any man, or pregnant woman, who lives upon almost any diet that is sufficient to sustain life, will, if the nutritive organs be in proper condition, find more than is necessary of these elements (*i. e.*, lime-salts) to keep the osseous system in good condition." After giving some of the physiological reasons why the administration of the earthy phosphates for nutritive purposes must be a mistake, he concludes by stating: "If they act at all, it must be remedially, and if they are used they should be intelligently prescribed, like any other agent, and only for their medicinal properties. I have no knowledge that they have any very decided medicinal virtues, and, therefore, can see no excuse for dispensing such inert compounds."

Prof. Morgan, of the Vanderbilt University, Nashville, in the discussion of the subject before the Southern Dental Association, expressed his convictions thus: "A great deal has been said in the last few years, and some allusion has been made to proper diet in general, and to diet having the proper amount of bone-making material, and the impression has been received by the dental profession in this country everywhere that there is too small an amount of bone-making material in all food, and in all bread particularly. I accepted the doctrine when first promulgated, but after examination I came to the conclusion that we are entirely wrong on that subject. Take rice, which has $\frac{91}{100}$ of one per cent. of saline matter in it, and if

you sit down and make a simple calculation, there is more bone-making material in rice, if a man were to consume a quarter of a pound a day, than is necessary to build up and make the best osseous structure that a man ever had."

According to the average dietaries for adults in full health, collected by Dr. Playfair (*London Chemical News*, May 12th, 1865), about twenty grammes of mineral matter are daily introduced with the food; and so I might go on enumerating testimony in support of these now universally accepted facts, sufficient to fill a volume.

Lime-water is a perfectly clear and transparent liquid, inodorous, and has an astringent and somewhat alkaline taste. It changes vegetable blues to green. It differs from the solutions of the alkalis in being destitute of caustic properties. On the other hand, it has a powerful astringent and styptic effect; hence, even in overdoses, it never disorganizes the animal tissues. Its astringency is not shown by a contraction of the parts to which it is applied; it appears rather to control their secretive action, rendering them dry and pale. When absorbed it has a similar effect upon the glandular organs, diminishing their secretions in a remarkable degree.

Therapeutically, it has been prescribed for a variety of ailments. In 1739 the British Parliament decreed a national recompense of £5,000 sterling to Mrs. Johanna Stephens for her lithontriptic remedy, which consisted of egg-shells, soap, and several aromatic bitters. This preparation, however, was found so nauseous and so distressing to the stomach that various substitutes were proposed for it, among which the most simple was lime-water. The writings of Gaitshel, Blanc, Whytt and Alton may be cited in favor of the efficacy of this liquid in calcareous affections. Here we see lime-water administered for the purpose of dissolving calcareous accretions in the bladder, yet, on the other side, we are told, when properly administered, it will induce a recalcification of the teeth. Most wonderful remedy!

Nutrition is a tissue-function; the act of this process is the appropriation from without of the materials which enter into the composition of the living frame, or of others which may be converted into them in the interior of the body. The difference between the protoplasmic elements that originate a tooth and those which originate bone, we may never be able to distinguish; yet we know there is a force that directs to formation as certain as intercepted light will

cast a shadow. Over this process or affinity we have no control. The tissues may be bathed or saturated with the lime-salts, but if they be not taken up or appropriated their presence is of no value. You may lead an ox to water, but you cannot make him drink.

I know of no remedy that is more efficacious in neutralizing the acidity of the fluids of the mouth. It is an excellent astringent in flaccidity and sponginess of the gums, preventing putrefaction, and by its mild stimulation inducing a healthy reaction of the general tissues of the oral cavity, in this manner removing the external causes of caries, and thus preventing the progress of decay of the teeth.

If the administration of lime-water is efficacious in hardening decalcified teeth, it ought to be a specific in rachitis; yet we find that its administration in combination with milk is only occasionally beneficial.

If the theory advanced that, on account of the geological formation that environs New Orleans, the inhabitants thereof are deprived of a sufficiency of lime-salts, because they are confined to cistern water for potable purposes which contains no lime, rachitis ought to be more prevalent here than it is; yet, in my professional experience of thirty-six years, but one case of rachitis has come under my observation.

Softened and poorly organized teeth are not confined to any one locality of this country. The best proofs that can be brought forward in evidence of the universal prevalence of poorly organized teeth are the papers published some eight years ago by the advocates of what was then called the "New Departure," who claimed that the large number of softened and decalcified teeth existing throughout the length and breadth of this land—lime-stone districts as well as elsewhere—could not, because of this condition, be saved by means of gold fillings, and averred that plastics must be substituted instead.

In conclusion, I think it can be safely asserted, judging from all the lights we have before us, that the administration of aqua-calcis as an effective agent in supplying the necessary rehabilitating elements has been weighed in the balance and found wanting; and, as the natural deduction, that New Orleans is more liable, on account of its peculiar environment, to the production of "softened and decalcified" teeth than is the case elsewhere, is a palpable fallacy.

DENTAL CHEMISTRY.

BY S. B. PALMER, M. D. S., SYRACUSE, N. Y.

READ BEFORE THE FIFTH DISTRICT DENTAL SOCIETY OF THE STATE OF NEW YORK.

The time allowed to write this paper was as short as the subject is long, and it has required no little study to harmonize the two elements so as to present anything instructive.

For twelve years past it has been my duty in the State Board of Examiners to question candidates for the degree of M. D. S., upon this subject. The fact is revealed that some are well informed, while others know almost nothing of the science of chemistry. Therefore, a paper which would instruct and interest a chemist would be Greek to him who is ignorant. I will, therefore, ask the more fortunate to return with me for a few moments to the A B C of chemistry in the hope of encouraging private study and helping such as would gladly seek a practical knowledge of the subject.

Chemistry is defined as that branch of science which treats of the composition of substances, and of the changes which they undergo. It may be divided into four parts.

First.—Inorganic, which treats of minerals or inorganic substances.

Second.—Organic, which treats of substances that form the structure of organized beings and their products, whether animal or vegetable.

Third.—Practical or applied chemistry, which treats of the manufacture of the products of chemistry, their application to commercial purposes and of the conditions essential to their best use.

Fourth.—Pure chemistry, which treats of the element constitution of substances, of the laws of combination, and of the mutual reactions, and the relations therein involved.

It consequently explains modes and preparations of composition, and the process of decomposition and decay, and also the nature of the elements and of their compounds. Thus you see, Dental Chemistry, taken in the operative and mechanical department, involves each and all of the above named divisions, while many occupations might be limited to one or two branches.

It is hardly possible that dentists who are practicing without a knowledge of chemistry will become greatly proficient in their

profession by individual study. Knowledge is power, no matter how obtained, and while many apply chemistry without any knowledge of the science, scientific knowledge would give a yet more extended field of practice. Our State laws make it obligatory upon those entering the profession within the State to know something of chemistry. We have those with us who formerly registered under the law without examination, and we presume without the advantage of a chemical education. I will endeavor to present the subject, both in language and by illustrations, so as to be understood, and will confine the teachings in chemistry to the department relating to our specialty. We must, however, refer to the rudiments in order to know what simple elements enter into combination in the formation of the dental organs.

Chemistry teaches that all matter of which we have any knowledge is composed of about sixty-five simple elements. From this small number, by various combinations and proportions, come the countless number of mineral, vegetable and animal forms, which comprise, surround and inhabit the globe. About three-fourths of this number of elements are classed as metals, and one-fourth non-metallic. In their simple or pure state little knowledge would be required to classify them accordingly.

The elements which enter into the dental organs probably do not exceed a dozen. In fact, it is claimed that thirteen only, called zoonic elements, taken from both classes, form all the structures in which life is manifested.

Leaving out proportions, Dental Chemistry teaches that human dentine consists of cartilage and vessels, phosphate of lime, fluoride of calcium, carbonate of lime, phosphate of magnesium and soda, with chloride of sodium. Those only who understand chemistry, know by this statement what simple elements enter into dentine or other portions of a tooth. The fault is not with the stinted analysis, but with those who cannot comprehend the constituents of the compounds given. The chemist would at once see by this analysis that dentine is composed of phosphorus, fluorine, calcium, carbon, magnesium and sodium.

Let us analyze carbonate of lime, a component part of the teeth, also of the salivary calculi, as well as limestone and marble. Take a piece of marble and apply heat as is done in lime-kilns, and we have two unlike substances—a gas known as carbonic acid gas, and

quicklime. The gas when treated by heat, according to chemical instructions, is separated into carbon and oxygen. Send a current of electricity through the quicklime and there appear the white metal, calcium, and oxygen; with this all further attempts at division fails, and we say carbonate of lime is composed of carbon, calcium and oxygen, three simple elements. Thus the other compounds of tooth structure, chemically treated, at once reveal their constituents or simple elements. By reversing this order, compounds are formed from simple elements. This is called synthesis, going from simplicity to complexity, not alone to produce compounds which have been analyzed, but to form new ones not found in nature, like glass, soap, etc.

There appears to be no limit to the combinations and changes which may be produced by the union of even the thirteen elements which enter into living forms. In the characters representing the Morse Telegraphic Alphabet, we have a dot, a short and a long dash. By various arrangements of these symbols, all the letters and numerals are represented in a manner to give expression to the greater portion of our daily news. So with the elements. By the laws of affinity they unite in definite proportions, which may be determined with mathematical accuracy. What affinity really is we cannot tell; it is a force to be classed with cohesive gravitation, magnetism, etc. The combination of elements often produces unexpected results, and furnishes substances unlike their constituents, or even anything found in nature. Sand and alkali produce glass; alcohol and lime give chloroform; each wholly unlike its constituents. Again, sulphur and quicksilver unite to furnish vermilion, the coloring matter for red rubber. Elements combine in different proportions, giving very different compounds, yet each compound has its exact proportion. Nitrogen and oxygen, which are tasteless, when combined in equal proportions give nitrous oxide, which is sweet. One part nitrogen and five of oxygen give nitric acid, which is intensely sour.

Matter combines under influence of attraction or affinity. As already stated, dentine is composed of phosphorus, fluorine, calcium, carbon, magnesium and sodium, not taking into account oxygen, hydrogen, nitrogen, etc., found in the cartilage and vessels.

We must bear in mind that elements combine according to their affinity for the elements present. Whenever it occurs that a new

element is introduced, with greater affinity for any one in the compound, the old relations are broken up and a new compound is formed. To illustrate; alcohol and camphor-gum will hold peaceable relations unless water be added. In that case, alcohol will unite with the water, and at once reject the camphor, which will appear in white flakes upon the surface. Thus it is easy to understand how acids affect tooth structure, and quite as easy to account for the presence of acids, when we consider that they are the result of fermentation. In the laboratory cavities cannot be produced by immersing teeth in acid, but when the experiments are conducted upon the principle that governs in the oral cavity, they furnish like results. The simplest experiment is accomplished by the electric current in a neutral or slightly alkaline solution, one pole of the battery furnishing acid to dissolve the dentine, while the lime is deposited at the other pole. Thus we may understand the process of disintegration where food is confined between teeth or in cavities. Decomposition goes on undisturbed by the surrounding fluids.

In teeth which are filled with metallic fillings, unless certain conditions are observed, decomposition continues. Dryness is essential; that is, if the plug is imperfect, or the dentine too porous to prevent fluid circulation, thermal changes through the moisture excites sensibility, and in time destruction of the surrounding tissues follows. Amalgams which contain copper and silver, often by the oxides and sulphides arrest decay in frail teeth, but good amalgams, or rather such as we would choose to insert, as well as gold, need to be insulated, or so inserted that the porous dentine and the irregularities and angles of the cavity are filled with some indestructible varnish, the only method to my knowledge which will preserve an amalgam filling bright upon the inner or wall surfaces. One thing is certain; when amalgam remains bright next to dentine, there is no decomposition going on.

Dental Chemistry as a study is greatly undervalued. Organic chemistry should be taken into account in connection with histology and biology, by which more light might be gained respecting the growth and absorption of the dental organs.

Because bone is not an electrolyte in the laboratory, and for the reason that it cannot be deposited upon other articles by the electric current, like most metals, we ought not to declare the principle

false in biology. It is not my intention to create a "New Department" in the process of the growth or absorption of dentine. To my mind we have only to add to the principles now understood in physics what may be understood respecting vital force, to enable us to comprehend this subject which at present is but a theory, and not satisfactorily explained.

A knowledge of organic chemistry electro-biology and the electro-vital currents, would give to a comprehensive mind a definite idea of the principles and process of the growth of the dental organs, including exostosis and absorption, and not less the breaking down or building up of dentures according to constitutional changes. The key note is polarity; polarity of the elements furnished in the blood. It is well known that reversal of the current would take from the article being plated, and the metal thus taken would be deposited upon what before was the electrolyte, at the other pole of the battery.

Apply this principle to physiology, where other than metallic elements are influenced by electro-vital currents, and we may better comprehend the methods by which organs of living bodies undergo changes.

Thus it may be seen that Dental Chemistry, instead of being but one division of the four defined, embraces all, giving ample opportunity for study and investigation far beyond anything to be found in text-books, or even recorded in dental literature.

CHICAGO COLLEGE OF DENTAL SURGERY.

THE ADDRESS OF DR. JAMES A. SWASEY, PRESIDENT OF THE BOARD OF DIRECTORS, TO THE GRADUATING CLASS.

The presentation of your diplomas is the last official act of your Alma Mater. We have placed you in the front rank of dental graduates, for we have required of you higher preliminary qualifications, a more rigid final examination, and a longer College course than is required in most similar institutions. If you would honor the profession you have chosen, there are many things you must do, and some things you must not do.

First, you must continue your studies by frequent reference to the notes you have taken of the valuable lectures given by your professors, and by your numerous text-books. But rely not upon

these alone. Procure the best literature of the profession, and read it carefully. Join all dental societies that it will be possible for you to attend. And note well the experience of your seniors, for what they have acquired by perseverance and study, should be of service to you and your patients. Do not think you can accomplish with little effort what others have worked a lifetime to acquire. Study carefully all cases, to make a correct diagnosis. This is not always an easy thing to do. In giving your advice be honest, and in every operation that you perform do your best, that your patients may not have occasion to feel that they have been misled by your advice, or have suffered from your lack of careful attention. The successful dentists are those who are thorough in every operation, however insignificant. Emulate them, and you will rise in the race for fame. These are some of the things you should do. Now the things you should not do.

Do not compromise your personal dignity by being too familiar.

Do not think your patrons come to you to be amused, for there is very little that is amusing in a well regulated dental office.

Do not boast of your superior skill; your patients will soon discover for themselves whether you have any or not.

Do not have the only set of instruments of the kind ever manufactured, or the only panacea for any pain.

Do not imagine that every young lady who consults you is hopelessly in love with you, and dying for an acquaintance.

Do not go to church for the sake of getting practice, but for a higher and nobler object. If you must resort to this or starve, take a pew in but one church at a time.

Do not complain of being overworked and rushed with appointments, when you are eagerly waiting and watching for patients, and your landlady is as eagerly waiting and watching for her board bill.

Do not imagine that you have a great reputation after a few months' practice. It takes many years to make a reputation in dentistry, and a lifetime to keep it.

Do not forget that your Alma Mater will watch anxiously for your future; that she will be proud of your successes and deplore your failures; that any needed advice will always be most cheerfully given, and that she hopes that her festive occasions will always be cheered by your presence.

Reports of Society Meetings.

LOUISIANA STATE DENTAL SOCIETY.

ANNUAL MEETING FOR 1886.

REPORTED FOR THE INDEPENDENT PRACTITIONER BY "MRS. M. W. J."

(Concluded from page 205.)

Dr. W. J. Reese, an honorary member of the Society, read a long and valuable paper on

"URÆMIA, AND ITS EFFECTS UPON THE TEETH."

He was convinced, from the observations of a number of years, that uric acid in the blood was the cause of serious trouble in the mouth. Uric acid is found in the excrement of many reptiles, insects and birds of the carnivora, and of the herbivora while suckling. Dr. Beale has estimated the quantity of uric acid in healthy human urine to be from one-half to one grain in 1,000 grains, from five to eight grains being excreted daily by a healthy adult. Its presence is detected by the addition of a drop of nitric acid to the suspected deposit. If uric acid is present, brisk effervescence will take place. Evaporating over a lamp a reddish residuum is left, to which the addition of a drop of ammonia will give a rich purple tint, from the mur-oxide or purpurate of ammonia. Suspected fluid is to be treated with a few drops of glacial acetic acid, in a watch glass. Immersing filaments of silk or tow, and keeping them under a glass shade in a warm place, crystals of uric acid will be deposited on the filaments. Suspected saliva may be collected on a watch glass and evaporated over a spirit lamp, adding a drop of nitric acid and continuing the evaporation, stirring from the bottom with a stick dipped in ammonia. Uric acid, if present, will be thrown down as a red precipitate.

The proportion of uric acid in the urine varies with the diet used, being increased by a diet largely of meat, and also by the use of spirits. The percentage in various diseases has been estimated by Dr. Sansom to be in—

Acute Gout.....	.830
Rheumatism.....	.802

Heart Disease.....	.711
Erysipelas . . . . .	.679
Excessive Debility.....	.078
In Health.....	.250

It is retained in the blood by diseased action of the kidneys, which lose their power of excreting uric acid, but eliminate it in health. During convalescence from gout or rheumatism large quantities are carried off in the urine and by the emunctories. "Fever blisters" are caused by the elimination of uric acid from the blood after fevers.

The hemorrhagic diathesis is also intimately associated with uric acid troubles. Nasal catarrh, in connection with Pyorrhea Alveolaris, is probably due to the same cause. The effect of uric acid in the blood, upon the teeth, is a *phagedæna pericementi*—an eating away or absorption of the peridental membrane. Pyorrhea Alveolaris is a misnomer ; uric acid produces violent inflammation and intense pain, but rarely suppuration, except in contact with the fluids of the mouth, and not always even then. At the roots of the teeth, where protected from the air and the saliva not in contact, there is no suppuration. There is sometimes a bony deposit instead of absorption, and sometimes both of these conditions may exist about the same tooth, as in the superior molars, where, on the palatine root, the gum and alveolus will often be absorbed without suppuration, while the labial root will be exostosed, though apparently otherwise healthy, especially if it has no antagonist. The formation of tophus on the roots of the teeth is a concomitant of uric acid trouble, though not necessarily so. When present, absorption always precedes the deposit by from one-sixteenth to one-eighth of an inch. Sometimes the tophus of uric acid and deposits of salivary calculus—phosphate of lime—will be found on the same tooth, the latter being of a lighter color and more porous. Women, when irregular in menstruation, or during pregnancy and nursing, have, in addition to the deposits, the gum festoons purple, and bleeding at the slightest touch, sometimes from the quantity of blood and lack of inflammation, constituting a form of vicarious menstruation.*

*To check profuse hemorrhage after the extraction of teeth, take a very soft wax impression of the parts—trim it out and fill with a soft batter of plaster and apply immediately, pressing down firmly until the plaster is set. This will succeed after all other methods have failed.

The action of uric acid in dissolving the peridental membrane is the same as in the articulations and periosteum in other parts of the body, the peridental membrane being anatomically the same as the ligaments, as proved by the investigations of Dr. Aguilhen de Terran.

The systemic treatment is the same as for gout and rheumatism. Exercise in the open air, hot baths, keeping the skin clean and the pores open. Use vegetables and lemons freely, avoiding meat diet, as also alcoholic, vinous or malt liquors.

For local treatment, a surgical operation is rarely necessary. The urates dissolve in nitric or acetic acid; the efficacy of peroxide of hydrogen is due to the nitric and muriatic acid used in the manufacture. Uric acid yields its base to nitric acid, hence the peroxide of hydrogen dissolves deposits of recent formation, and by adding a small quantity of nitric acid the phosphate deposits are also dissolved, the nitric acid uniting with the alkaline base. Uric acid tophus can also be dissolved by potash, soda or ammonia, the alkalis uniting with the uric acid. It has also a great affinity for chloride of sodium, which will dissolve the deposits, but is very painful to the gums.

R

Creta Prep.	℥ii	
Bicarb. Soda (Squill's)	}	aa ℥i
Pulv. South Amer. Soap—		
Tree Bark		
Ol. Wintergreen		q. s.

(Pulv. Orris Root may also be used).

This powder used freely by the patient, and packed around the gums at night, in connection with peroxide of hydrogen rubbed briskly over the deposits by the operator, will remove all deposits without the use of instruments.

The powder is also a specific for sensitive dentine at the gums. The pockets should be syringed with the peroxide, and the application made to the deposits by means of cotton wrapped on an excavator. The peroxide should not be exposed to the light, but the quantity necessary for one application should be poured into a clean vessel, from which the syringe can be filled and into which the mop can be dipped. Robinson's Remedy is very efficacious, the potash neutralizing the uric acid, but it must be used with great caution.

R

Hydrate Chloral

Spts. Cochlearea aa \bar{z} ii

applied with a mop, will be found equally efficacious, and safer if a napkin is used to protect the lips.

A paper was read by Dr. P. J. Friedrichs entitled

OBTURATORS.

He described the usual forms of Obturators and Artificial Velums—condemning the former as interfering with any efforts of nature towards closing the gap, while the latter, being soft and elastic, adapts itself to the varying surface of the palate, allowing the aperture to close by granulation, when properly protected.

He described a device of his own, by which the patient was able to exchange the flexible disk for a new one whenever it became softened, losing its elasticity. The patient was wearing a partial upper plate of vulcanite, to which he attached an elastic strip of 18 carat gold. In this strip he cut slots having two dove-tailed flanges, passing the strip through holes in the disk. The latter is held securely in place by the flanges, and easily removed when a new one becomes necessary. When a plate is not worn, the appliance can be attached to sound teeth by clasps.

Dr. J. W. Adams read a paper on

THE ORAL CAVITY AND ITS RELATIONS TO THE GENERAL SYSTEM.

He described in detail the mouth, its parts and their several functions, traced the intimate connection between the mouth and the nervous, circulatory and digestive systems, showing that diseases of the former were often the cause of obscure and persistent diseases, even of portions of the system apparently the most remote, the tongue affording an index to the condition of the stomach, the teeth of the condition of the uterus. Diseases of the blood and of the respiratory organs are caused by vitiated secretions from carious teeth, chronic abscesses or necrosed bone. He also cited cases of epilepsy, facial neuralgia, amaurosis, gout, hemorrhoids, diseases of the eye and ear, all resulting from diseases of the teeth and cured by proper attention to them.

Dr. J. G. McCulloch read a paper entitled

AMALGAM.

He said that, while in the hands of the charlatan and the quack it may be used to deceive and impose upon a confiding public, from

the ease with which it is manipulated by those who have not the skill required to produce good results with gold, nevertheless, even the most skilled operators will find cavities so located that nothing else can be employed; teeth of a character that no other material will save, and patients whose means will not permit expensive operations in gold. He referred to an article published in the *Southern Dental Journal*, from the pen of G. Chisholm, in which various evil results and diseases are attributed to Amalgam fillings in the teeth, with, however, not a fact or a theory advanced to show how or why the Amalgam should be held responsible beyond the query: "If it was not the Amalgam, what was it?" He claimed that Amalgam stands second to no other material, when properly used, the cavity properly prepared and the filling thoroughly finished—used with judgment and in its proper place; that it would save teeth that no other material would save, and could be used where no other material could be employed. He spoke of its great value for attaching facial crowns to otherwise useless roots. Also as a means of saving the teeth of the poorer classes, who require assistance as much as more wealthy patients. If only for them, Amalgam is the greatest boon given to dentistry.

Dr. J. S. Knapp—Thought Amalgam should be used only when gold was out of the question; that it was not a durable material, being serviceable only for a few years; that being considered "cheap work" the fillings were not properly finished at the cervical margins and were not properly polished; also that Amalgam had a tendency to render the tooth-substance brittle, causing it to crumble away at the margins.

Dr. O. Salomon—Thought the brittleness, sometimes observed, due to copper in the Amalgam.

Drs. G. J. and A. G. Friedrichs—Thought all Amalgams had that effect.

Dr. O. Salomon—Uses pellets of old Amalgam, left over from the day before, impacted in soft, new fillings, to prevent shrinkage in very large fillings.

Dr. J. R. Knapp—Thought Amalgam objectionable, principally because of its uncertain character. It can not be depended upon. Sometimes it will bulge, sometimes it will shrink, and both results may be obtained from the same package and in the same mouth. Uses it with the matrix for partly filling very large cavities ex-

tending far under the gum, where it is next to impossible to so adjust the rubber dam as to permit the use of gold. In such cases the visible portions can be finished with gold, burring out the Amalgam after it is thoroughly hardened. In Amalgam fillings, dressing the margins and polishing the fillings are the most essential parts of the operation, and should be as thoroughly done as in the most expensive gold work, in both cases not for display, but for service and wear, for the preservation of the tooth and the comfort of the patient.

Dr. A. G. Gayle—Thought the combination of gold and Amalgam liable to create an electric current.

Dr. Salomon—Said that it had been demonstrated that where they were combined in one tooth, no such current was created.

Dr. D. G. Parker—Thought gold or even tin cylinders preferable to Amalgam. That Amalgam would bulge or move, and more or less would be left between the teeth, below the margins.

Dr. J. R. Knapp—Considered tin an excellent article, but requiring fully as much, if not more, skill and labor and space to handle than gold, in the inaccessible cavities to which he referred.

Dr. A. G. Friedrichs—Would use Amalgam only when it was impossible to use gold, and knew of no such limit except the inability of the patient to pay for gold. Would use gold exclusively, and as a rule in the form of cylinders. Did not use the rubber dam. Had a yard of it which had been in his office over a year. Had found no use for it.

Dr. G. J. Friedrichs, the President, calling the Vice-President to the chair, read a paper entitled

AQUA CALCIS.

This was a criticism of a paper published in *THE INDEPENDENT PRACTITIONER* of November, 1885, entitled "Dental Nutrition." He quoted from that paper.

The election of officers resulted in the unanimous re-election of the President, Dr. G. J. Friedrichs, the Recording Secretary, Dr. Chas. Eckhardt and the Treasurer, Dr. C. C. Baquie. Dr. D. I. Parker was elected 1st Vice-President and Dr. M. J. Massingill, 2d Vice-President, and Dr. A. C. Gayle, Corresponding Secretary.

Adjourned to meet in New Orleans on the Wednesday after Mardi Gras, 1887.

CENTRAL DENTAL ASSOCIATION OF NORTHERN NEW JERSEY.

REPORTED FOR THE INDEPENDENT PRACTITIONER.

A regular meeting was held on Monday evening, March 15, 1886, in the parlors of Dr. William H. Atkinson, 41 East 9th Street, New York, the President, Dr. B. F. Luckey, in the chair.

Dr. Atkinson, not having had time to prepare a paper for the occasion, presented one entitled "Disease," read by him before the Dental Society of the State of New York, in May, 1883. After the reading of the paper he addressed the meeting as follows:

Mr. President, I wish to say a few words in justification of what I have been saying in that paper; and if every one of you could have been with me to-day in the court room, where an effort was made to mulct a dentist in \$50,000 damages for inserting what was termed a poisonous substance into a lady's mouth, and thereby producing a myxomatous lupus, that was nominated in various terms by different medical men, you would have been willing to accord me the joy that I have expressed about the growth of dentistry. When I hear men, who said they had taken the degree of doctor of medicine and a pharmaceutical degree, state unblushingly that all combinations of mercury were poisonous and terribly escharotic, that H.G.S., which is the sulphate of mercury, was capable of being dissolved in the mouth and resorbed into the circulation, and of producing salivation, ulceration, alveolar abscess and this specific mode of degeneracy known as lupus or cancer, I began to think they were the boys. It was superficially educated men who swore that this disease was the immediate result of the insertion of an artificial piece, that could not have done anything more than mechanically and thermally disturb the nutrient currents.

Physiologists have said that if you do not know you have got an organ you may be sure you are healthy, but if your attention is called to any organ so that you are reminded that it exists, look out; there is something wrong; the harmonious functional action has been interfered with.

How do they deal with disease? They would make it ease; and they do that by swamping the consciousness. They will give you some narcotic, and make you so drunk that you do not know what is going on. And if they can so confine this stored radiancy in

the organism as to make you sweat, or vomit, or purge, then this stored radiancy can come to your relief in its reaction, and they have not only this immediate arresting agency that we call a narcotic, but radical depleting too; and then you come out all right. Is that sound sense or not?

A subcutaneous injection of morphine may be given for any complaint; and it will cure it, too, many times. I had a gravel stone passing from the urethra into the bladder, which put me in terrible agony. I was well posted upon the symptoms of that kind of thing, but I had been accustomed to consider them objectively, and when they became subjective, I didn't know what ailed me. I thought of everything in the neighborhood of the pain, but did not hit the right solution. I sent for my eldest son, who immediately said I had a calculus passing through the urethra, and then I could see he was right. I was trying to think of myself as I had thought of other people, and was taking my feelings in place of my observation. This was a case in which the subcutaneous injection of morphine was legitimate. There was a stone passing through a narrow pipe, and it was giving me intense pain. The morphine was used to produce mental and muscular relaxation by drowning consciousness, and for twenty-four hours I did not know anything at all. The little bit of gravel was passed, and then all I had to do was to feed up. That is a great many years ago, and I have had no trouble of that kind since.

Dr. Clowes—Will Dr. Atkinson please tell us what became of the calculus?

Dr. Atkinson—It passed through the urethra. There were several little gravels that were broken up. One, I judge, was ragged and sharp, a sort of three cornered calculus, and that stone caused the severest pain. They were less than half the size of a grain of wheat. I have never been conscious of any since. I take on an average, three times a week, one pill of nux vomica and phosphorus and cantharides (McKesson & Robbins' formula) at night. That has a fine effect upon the urinary tract with me.

Dr. Clowes—What is its effect?

Dr. Atkinson—It is tonic and diuretic if one pill is taken; if I take two it becomes a stimulant, so as to lessen the calibre of the uriniferous tracts.

Dr. Day—Did you experience very much nausea?

Dr. Atkinson—Not a bit.

Dr. Day—If you had, don't you think it would have been some relief?

Dr. Atkinson—Yes. That is what I mean by awakening the stored energy in the body. They say the fools all run to a fire. That is just the way it is in the body; all those little mugwumps that have nothing to do, whenever there is an irritation they will run to it. Where the irritation is, there is the flow. The irritation being in a particular territory, there is a call upon this stored radiancy, and when that is impressed upon the stomach it produces nausea by inversion of the peristaltic movement of the intestines and stomach. It is by reason of that inversion that we vomit at all. This would be a benefit, by producing so much relaxation throughout the system that everything would be limp, and then the stone could go on and be expelled.

Dr. C. S. W. Baldwin—That juicy pabulum you spoke of in reference to abscessed teeth; is that the same substance that we see after teeth have been extracted, the white substance that is found in their sockets?

Dr. Atkinson—Oftentimes it is. It is nothing but broken down tissue that has not been absorbed.

Dr. Baldwin—How do you distinguish between healthy and diseased pabulum; between that which is found in the sockets of abscessed teeth and that which is seen after health shows itself, or begins to show itself?

Dr. Atkinson—That question is a very hard one to answer, without you go far enough to apprehend what I mean by saying that you cannot have an abscess of any kind in a mammalian body where the blood crassus is normal. An amount of churning must take place in the preparation of the nutrient fluid in the body to admit of its death anywhere, at any point. With patients who are very constipated and jaundiced, with a slow liver, there is unhealthy blood crassus, and then when any little inconvenience occurs, they may have abscesses. If the same kind of obstruction should occur at the foramen of a tooth, that would, in case the blood crassus was bad, produce an abscess and suppuration. If the blood crassus were perfect, what would become of the same obstruction? Simple atrophy would result; a drying up of the contents of the pulp chamber to the end of the root. Then the next thing would be

encystment of the end of the root. What constitutes the pulp changes at the foramen? You know there is a little connective tissue that surrounds the leash of blood-vessels and nerves at the end of the root. Are there any absorbents there? I have never found any. A few histologists think they have found absorbents in the pulp. Some think they have found arteries there. I do not think there is an artery in any pulp. What they see are simply blood tracts. Simple atrophy will result in such cases when the pabulum is perfect. Then you will say, who has perfect pabulum? Almost nobody.

Dr. S. C. G. Watkins—I would like to ask Dr. Atkinson how we are to determine between health and disease in the case of exposed pulps, and know just when to cap the nerve and be certain that it is living?

Dr. Atkinson—The only way that can be known is by testing. The manner of testing is first by the eye. If the pulp be sufficiently exposed, we can very readily see whether there is a drop of pus already formed at the point of exposure. If there is a drop of pus there, the character of that is almost certain to be a favorable indication of saving the pulp. But what would you do if you found pus elsewhere? That is our mistake, that we have thought we were dealing with this point only, when there was really abscess somewhere else in the soft tissues. Remove the pus and then apply almost any of the carbo-hydrates. My preference is the saturated solution of salicylic acid. Then dress it with a little sandarach varnish, pretty well dried down, so as to keep out food and all foreign substances. The next day you will see at once whether the inflammatory action has been arrested. If pus has been formed and you get a drop of pus, it is next to certain that there will be proteinaceous coagulum, and that will make the very best kind of nature's dressing, so as to enable you to cover it up. How would you cover it? A little oxide of zinc mixed into a paste with half creosote and half oil of cloves applied first; then put oxy-phosphate of zinc over that, and instruct the patient to come the next day if there is uneasiness; if perfectly free from pain or uneasiness, the patient need not come for a week. Let it go for some time until satisfied of the extinction of the mischief. If there should be any trouble it is easy to take out the oxy-phosphate filling and re-dress, but never destroy a pulp for that. I know of but one excuse for

destroying a pulp, and that is when pulp stones are attached to the sides of the pulp chamber and you cannot take them out. The first pulp I have destroyed in the city of New York has occurred within three weeks, and that was my excuse for doing it. It was in a left superior third molar. I did put in arsenic, and extirpated the body of the pulp with the pulp stone.

Dr. Watkins—Where the pulp is a little exposed and there is considerable inflammation, but no drop of pus, what would you do?

Dr. Atkinson—Bleed it.

Dr. Watkins—How can we be morally certain of saving that pulp alive by capping?

Dr. Atkinson—I am only morally certain of going down stairs legitimately, by not attempting to go down at one step. Take the steps in their proper order. The first step to take is to relieve the congestion. What is the best method of relieving congestion in a pulp? It is to excise the exposed part and let it bleed freely. Don't kill the pulp for the sake of having a funeral, but for humanity's sake, give the little fellow a chance to live. If it dies, then bury it, or cremate it.

Dr. Watkins—What percentage of exposed pulps do you save?

Dr. Atkinson—When I was keeping percentages, it was so high that almost everybody said I exaggerated. I do not think one per cent. failed. I think a pulp that is congested is capable of being preserved. My reason is this; whenever congestion is carried to the point of transudation of pabulum or of blood, there is a more or less arrest of the circulation that needs relief, and when that is responded to, and the other portions are sufficiently fluid to keep up their wonted circulation around these little ponds or lakes—they are like varicose veins—then cut that out, and it recuperates itself by simple treatment. You will be astonished to see how many pulps will be preserved, even where you have taken away the entire body of the pulp, leaving only that which is in the canals of the roots, especially the palatal roots of the upper teeth.

Dr. Meeker—I want to ask Dr. Atkinson about the, to him, familiar subject of sponge-grafting. At our last meeting I spoke of a case that I had just started that day, or the day previous. During the interval I have had three pieces of sponge in the cavity, and none of them have stayed. It was a case of two lower incisors. I burred away the necrosed portions, and cut off the apexes

of the roots. New tissue has formed there, and it is nearly healed over, but the sponge-grafts that I inserted would not stay.

Dr. Atkinson—What kind of a capping did you have?

Dr. Meeker—A little gutta-percha.

Dr. Atkinson—That is the trouble. You must have a pocket that is equivalent to the cavity in the flesh, where the tissue has been removed, before you can expect that exudant that forms the clot out of which new tissue comes shall penetrate the entire meshes of the sponge. I have a case that I just clipped yesterday, a left superior incisor, that has not had a drop of pus since a week ago yesterday. I saw that the pabulum did not quite fill the sponge, and I clipped off that part to where the granulation came up and boiled out. Take an impression and fit a plate of thin platinum, or Reese base, something that will make a pocket tight enough to keep out food. Have the sponge fitted so as not to press too closely upon the walls of the cavity and thereby shut out the exudant, but so arranged as to hold the exuding pabulum.

Dr. Meeker—The new tissue is all formed—I can see it—and without the sponge, and I do not understand it.

Dr. Atkinson—Your pocket has not been properly protected; your sponge was operating like a scab. When you pulled the sponge out, did blood follow?

Dr. Meeker—Yes. It is growing smaller every day.

Dr. Atkinson—Did not some part of the sponge remain in there, being converted into tissue?

Dr. Meeker—That was my impression. It did not seem as though I took it all out.

Dr. Atkinson—It seems to be converted into tissue. In almost all my early cases, especially when I used as high as 180° or 200° F. in sterilizing, the sponge would crumble away, but since I do not carry it above 160°, I have not had any difficulty of that kind. As sure as I get fresh pabulum so as to fill into the sponge, I have no trouble; the sponge serves as the scaffold poles upon which to build new tissue.

Dr. M. L. Rhein—I understand the spong is sterilized at 180° or 160°. Why is that degree of heat necessary?

Dr. Atkinson—In incubation, the incubating range is from 95 to 105 or 110 degrees; when you come to cook albumen, you will find it will begin to fibrilize at 120°. It will be very tender and will

break under the dissecting needle until you get it up to 163° or 164° , and then you can begin to lift it. When it will lift it is no longer fit for the reproduction of embryonal tissue. It is my belief that the coagulation of the albuminous part of the sponge at that high degree of heat unfits it for conversion into tissue.

Dr. Rhein—In bringing the heat up to 160° , is there not a great risk of carrying it higher?

Dr. Atkinson—There is no trouble at all. Have a Bunsen burner, and put your instrument in there and watch it.

Dr. Rhein—Would it be well to carry it above 105° ? What advantage is there in carrying it above that point?

Dr. Atkinson—I believe there are certain microbes that are not destroyed until the heat is raised to about 130° .

Dr. Rhein—I made failures in some of my sponge grafts, and the only reason I could assign was that the sponge was sterilized at too high a temperature.

Dr. Atkinson—How much heat did you employ?

Dr. Rhein—I only estimated it, and did not use a thermometer. I did not bring the water to the boiling point. How do you know exactly the temperature at which you sterilize?

Dr. Atkinson—I have a small annealed glass that will stand heat; I put the sterilizing solution into that and place the sponge in it; also a thermometer and set the glass into boiling water or over a Bunsen burner. I watch it until it gets up to 130° , then leave it until it goes up 5 or 6 degrees more. I have been showing so many how to do it that I have become *au fait* in the matter. You must be sure that the thermometer is properly registered.

Dr. Rhein—I have met with that difficulty. Lately I have been using warm water to sterilize the sponge, and I have met with perfect success. I do not carry the heat much over one hundred deg.

Dr. Atkinson—I do not know why you would not put a clean sponge in without cooking it at all.

Dr. Rhein—I do not see the advantage of bringing the heat higher. In one case I thought I was getting a beautiful result for about ten days, and then instead of getting pabulum I had ichor, just the opposite; disintegration of the sponge instead of forming a support, and I had to commence at the beginning again.

NEW ORLEANS ODONTOLOGICAL SOCIETY.

 REGULAR MONTHLY SESSION, DECEMBER 8, 1885.

 REPORTED FOR THE INDEPENDENT PRACTITIONER BY C. EDMUND KELLS, JR.,
 SECRETARY.

Dr. Chas. Eckhardt, President, in the chair.

The essayist of the evening, Dr. Geo. J. Friedrichs, being called upon, presented a paper on Aqua Calcis. (See page 235).

DISCUSSION.

Dr. Jos. Bauer—Had the pleasure of traveling last summer with the author of the paper so ably criticised, when that subject was brought up, and asked him for any physiological reason sustaining his points, but he could not give one; yet he claimed good results. Personally, the speaker had practiced in the alluvial districts of South-west Louisiana, and there found as good teeth as in regions 150 miles further north. Observation has long since taught him that the condition of the teeth depends more upon the general health than upon the local surroundings. As a proof of this, he cited the well known fact that the teeth of city people are poorer than are those of the country. There is an abundance of lime in the food we eat; the trouble lies in the assimilation. In the language of Dr. Bogue, "Thousands die of overeating, but none of starvation," to which I will add—at least not in Louisiana. During the meeting in Minneapolis this subject came up, and there seemed to be but two men in favor of lime water, one being the writer now criticised, and the other a *confrère* of his from St. Louis.

Dr. A. G. Friedrichs—The paper just read expresses my sentiments precisely. I believe that among the prominent predisposing causes for the production of defective dentures are hereditary influences. Again, the diseases of infancy through their influence on cell-nutrition, interfering with development of the teeth, is another cause. The inhabitants of cities, being much more exposed to

these ills, are more affected than are the people of rural districts. As lime water is given to dissolve stone in the bladder, we might suppose, following the same line of reasoning, that taken medicinally it would not assist in development, but would, on the contrary, dissolve the lime out of the teeth.

Dr. Geo. J. Friedrichs—I would like to ask the speaker a question: Does he believe it possible for lime water to restore the parts of a tooth which have been lost by erosion or decalcification?

Dr. A. G. Friedrichs—Certainly not. It may, by the removal of external causes (keeping the saliva in an alkaline condition), tend to arrest disease, but never to restore the parts.

Dr. John W. Adams—Dr. J. D. White long ago wrote upon this subject, very much to the same effect as the paper which is receiving so much adverse criticism, but that was at a time when the merits of lime water were not so well understood as they are now. I was born in a limestone district, and I do not think the teeth here are inferior to those elsewhere.

Dr. C. Edmund Kells, Jr.—I have read with interest the late writers upon this subject, but my own experience has not given me any definite idea thereon, much as I have been interested in it. However, upon the principle that a man cannot grow fat and strong without food, I believe teeth cannot be well nourished without lime. I, therefore, have been using and do yet advise foods rich in lime salts. As for "Heredity," careful observation has led me to the opinion that we can place no reliance upon it. That the teeth of the generations now coming on are poorer than those of their parents, I am convinced, and I attribute the fact to the present general manner of living. I have many little patients, from twelve to fourteen years of age, who already have had more teeth filled than their parents. It has been suggested by some writer that excessive mental strain produces dental caries, and I have no doubt that the mental pressure under which children are now raised results in a general physical degeneration, and the teeth come in for their share of the trouble.

Dr. Joseph Bauer—With reference to the statement just made, that food is necessary to fatten a man, I find that when I go in the sugar region, during the grinding season, the fumes of the boiling juice make me fat. I have gained fifteen pounds during a rolling

season. Children fed upon condensed milk are stouter than those fed upon ordinary food, but the tissue is not firm. The flesh gained upon a diet of cane-juice inhalations is the same. It is a well-known fact that consumptives, in the last stages of the disease, are brought to the sugar-houses, where they remain for a few weeks, during which time they get much stouter. The French are not great eaters; they eat a long time, but not very much.

Dr. Geo. J. Friedrichs—After all that has been said, we have drifted down to tissue function. Without the capability of the nutrient cells to appropriate what they need, it is folly to expect anything. If we had control of tissue-formation there would be no such thing as consumption, defective teeth, or, in fact, any of the ills to which flesh is heir, and the human race might live on indefinitely. Previous to the war, my preceptor, Dr. John S. Clark, who lived in Magnolia, Mississippi, had five friends, the finest specimens of manhood I ever saw, each weighing two hundred pounds at least, and standing six feet high in their stockings. They did not live in a limestone country. How could such osseous structures be produced in such a country, if lime water was essential as an element of development?

Dr. P. J. Friedrichs—I read to-day of a boy in lower Louisiana, seventeen years old and six feet ten inches tall. He must have gotten lime somewhere. Last winter, during the Exposition, I had occasion to examine the mouth of a St. Paul lady, whose brother was a dentist, and notwithstanding that she lived in a limestone district her teeth were full of fillings, and several crowns had been put on. If lime water is of any benefit, she should have had better teeth.

Dr. Joseph Bauer—I have a son who has never taken lime water (up to within a year, at least). Any hereditary tendency could have been nothing but bad—in regard to his teeth, I mean. Yet all his temporary teeth were sound, and at fourteen years of age but one or two crown fillings had been inserted.

Dr. Geo. J. Friedrichs—I wish to add the fact that many children, especially in cities, get more or less lime water, as it is given for indigestion, but at that time the permanent teeth are partly formed. Dr. Barrett's paper at the Minneapolis meeting pretty well disposed of the lime-water theory.

FIRST DISTRICT DENTAL SOCIETY OF THE STATE OF NEW YORK.

REPORTED EXPRESSLY FOR THE INDEPENDENT PRACTITIONER.

This society held its regular monthly meeting at the rooms of the S. S. White Dental Manufacturing Co., on the evening of April 6th, with the president, Dr. Wm. Carr, in the chair. The report from the afternoon clinic was as follows:

The attendance was about ninety. Dr. G. H. Dickey, of Brooklyn, presented a young lady about nine years of age, with very badly atrophied teeth. The advice given was to grind off the cutting edges and labial surfaces of all the incisor teeth, and thoroughly polish them.

Dr. C. H. Moseley, of Brooklyn, exhibited his new anæsthetic, called Soporative, which, it is claimed, only requires from seven to twenty-two inhalations to produce perfect anæsthesia, lasting from thirty to sixty seconds. At the clinic it was given to one patient for whom three teeth were extracted, and it was also administered to several dentists as an experiment. Dr. Moseley has used the anæsthetic for over five years, and has administered it to more than three thousand patients.*

Dr. Hamilton Barnes demonstrated the lining of rubber plates with heavy gold foil, especially prepared for the purpose.

Dr. Fr. Abbott, of Brooklyn, presented a patient for whom he had inserted a very large filling, involving the mesial and grinding surface of a right upper first molar tooth, filled in twenty-three minutes, with the new form of gold which was introduced by Dr. F. A. Brauneis, of New York City, a few months ago. The margins of the filling appeared to be good, although it has been shown by experiments that the adaptation of this gold to the walls of the cavity is imperfect.

Dr. Crowell, of New York, exhibited some pieces of 18-karat gold, as well as platinum, upon which some of his new body and gum enamel had been flowed. Both require only a dull red heat for complete fusion, and are claimed to be much stronger than the ordinary continuous-gum materials.

Dr. Starr, of the S. S. White Dental Manufacturing Co., exhibited a small box for holding pluggers and excavators, with a sliding

* We do not know of what Dr. Moseley's anæsthetic consists, but it is therapeutically certain that no new agent has lately been discovered. The drugs which produce anæsthesia are all well known, and their character has long been established.—EDITOR.

lid, and a box containing three glass jars for holding polishing material, such as pumice, chalk, etc., for office use.

Dr. Verplank, of Albany, showed a new rubber dam holder, designed to depress the rubber in the lingual portion of the mouth.

Mr. Fred Feltner exhibited the carbolized preparations recommended by A. Witzel for pulp treatment. These preparations, which are manufactured by S. Brechtel & Co., of Nurnberg, Germany, are put up in six half-ounce bottles, of which the first contains a carbolized solution of mastics employed upon cotton for temporary fillings; the second a carbolized pulp varnish, to be applied to exposed pulps previous to capping, and the third a carbolized solution of chloride of zinc, with iodine and morphine, employed for obtunding sensitive dentine, as well as in cases in which an escharotic agent is required. It is claimed that this preparation is a better escharotic than a strong solution of chloride of zinc, and that it acts without producing pain. The fourth bottle contains a carbolized solution of arsenious acid with morphine, recommended as a mild escharotic, the fifth a paste composed of arsenious acid and morphine, for devitalizing pulps, and the sixth a carbolized cement for capping exposed pulps and filling root canals. These preparations are extensively used in Germany.

Dr. Wm. H. Mitchell, of Bergen Point, N. J., presented the models of a case of irregularity, and several sizes of a new impression cup, designed for crowns and small bridge work.

Dr. E. P. Brown, of Flushing, L. I., exhibited samples of a new lot of his depressed rubber dam, which was exceedingly tough.

Dr. C. F. W. Bödecker, of New York, exhibited some teeth and matrices sent to the clinic by Dr. Wm. Herbst, of Bremen. The filled teeth beautifully illustrated the combined use of gold and amalgam for teeth with thin labial walls, where amalgam, when used alone, would discolor the teeth. The most important of these preparations were: A lower molar with a very large cavity in its grinding surface, which was lined with a thin layer of gold. An upper molar with a large cavity in the grinding surface, lined with gold and partially filled with tin. An upper bicuspid with a very large cavity, involving the mesial and grinding surfaces, lined with a thin layer of gold. Around this tooth there was a band matrix made of German silver. An upper lateral incisor with a cavity in the mesial and lingual surfaces, lined with gold. One lower and

two upper central incisors, lined with gold and filled with Herbst's amalgam. An upper bicuspid with a very large gold filling, involving about one-half of the entire crown of the tooth. The filling was left unfinished, and as the German silver matrix in which the filling was made was in position, but could be moved, it was noticeable that nothing had been done to the gold extending over the edges of the cavity after the removal of the matrix, and yet not the slightest defect was visible. There was also a medallion of a cameo, representing a head, which was made of a very thin layer of gold and Herbst's amalgam. This piece demonstrated that by the Herbst method gold can be burnished into the finest lines and irregularities of cavities, and that a thin layer of gold is not affected by amalgam, if a thin coating of varnish is applied, and that, consequently, amalgam, under such circumstances, will not discolor thin walls of teeth. The procedure of the method, which is original with Herbst, is as follows: After the cavity has been prepared and dried, a piece of No. 30 to 60 very soft gold foil (for this purpose Wolrab's is preferable), in size a little larger than the cavity, is pressed into it with a piece of cotton large enough to occupy the entire cavity. Then with a smooth-faced burnisher, rotated by the engine, the cotton is pressed into every corner. When the cotton is removed if the gold does not lie firmly against the wall in all parts of the cavity, a piece of No. 4 tin foil rolled up may be employed in the same manner as the cotton. If the gold foil has been perforated during the introduction, it can be repaired by small pieces of No. 30 to 60 gold foil, previously annealed, when finally, another large layer of the same foil is applied in the same manner. The gold in the cavity is then to be covered with a thin coat of suitable varnish, such as balsam of fir, and when dry the amalgam is introduced. When tin has been used for the compression of the gold it may, if the size and shape of the cavity will admit, be left in situation over the gold, but in this case a thin coating of varnish has to be applied to the tin.

Dr. Morey exhibited a case of fusion of two germs, in the situation of the right upper central incisor, in the mouth of a boy about seven years of age.

Dr. Atkinson, in the absence of Dr. B^odecker, announced that Dr. Wm. Herbst, of Bremen, will give a clinic of three or four days' duration in the month of July.

Editorial.

SETTLED AT LAST.

The controversy over the place of meeting for the American Dental Association is finally ended, and the birth-place of the society, Niagara, has been chosen. This is well, and the Executive Committee is to be commended for its work. No more satisfactory conclusion could have been reached, for while some will be disappointed, no one will be offended by the choice. So much of feeling had been aroused that, had either of the places prominently mentioned been selected, there would have been found those who would have antagonized the meeting, and a split in the society might have been the result. All this is wrong, of course, but the society will not be likely again to repeat the mistakes of last year.

Now that this preliminary matter is so happily disposed of, there remains nothing except to go to work and make of the meeting what it should be. And just here it is well to consider what is meant by a successful meeting. Some will, no doubt, understand by this, one at which a great many members are present. Others would define it as a meeting that was distinguished by goodfellowship and social enjoyment. Some will judge of it by its pecuniary results, and others by the dinners eaten, the wines drunk, and the excursions or entertainments indulged in. Probably the majority of our members would not consider a meeting successful that had not a crowd in attendance. And yet, the presence of a great number of new members may actually interfere with the real, true success of a meeting, and become a thing rather to be deprecated than coveted. Understand, everyone desires the presence of all who have really at heart the best interests of dentistry. Besides, the financial question is not one to be altogether despised, and the education of the rank and file in dentistry up to an appreciation of a higher standard is a thing of vital importance. This latter consideration is, however, one that should be mainly the work of subordinate societies.

The attendance of those who come merely out of curiosity and to view the lions, to indulge in a vacation and to have a good time, to see the sights and incidentally to purchase a new stock of gum teeth and red rubber, is really not at all desirable.

The Minneapolis meeting was by many denominated a great

meeting. Pray, what was there to make it such? There was a crowd in attendance, many new members were received, and the Association was royally entertained. But what great professional good has resulted? There is little left but a quarrel over the next place of meeting, in the hope that the same results might again be attained. What great discovery was there announced? What paper that marked an era in the profession was there given to the world? What remarkable discussion grew out of any presentation at that meeting? There were good papers read, and some interesting discussions grew out of them, but nothing that has made any deep impression upon the world of thought. The debates were principally over the old hackneyed subjects, and nearly the same dull round of littleness was trod. Inane trivialities were succeeded by empty platitudes, and a dreary waste of meaningless talk was too often the rule rather than the exception. Men without an original thought to present occupied valuable time, and the crude, undigested book readings of undisciplined minds were presented with an ex-cathedra air, as if the end of all research had been attained.

The American Dental Association is supposed to be a scientific society. It is intended to be a convocation of the very best intellects and intelligences in the dental profession of America. If it were what it really might be, there would be little to attract the illiterate, for the papers and discussions would be of such a technical and learned character that the average dentist could not comprehend them. They would be erudite, though not necessarily pedantical. There is, usually, very little of real scholarship in that windy rhetoric which affects high sounding phraseology, and revels in words of thundering sound. The American Dental Association, as the National society, should be above the consideration of trivial matters, and all rhetorical display should be sternly frowned down. It should devote itself to calm deliberations upon really scientific subjects, and leave the discussion of matters of detail in practice to the State and other societies with which all its members are connected. The papers presented before it should be such as to attract the attention of scientific men everywhere. As it is, with its present membership, there is an impatience manifested when anything of purely scientific interest is offered, and one who reads such an essay feels discouraged and disheartened at the coldness of its reception.

We hope there will be no misapprehension, then, when we say that a great mass-meeting of untrained minds is to be deprecated. That those meetings at which the largest numbers are present are not necessarily of the greatest moment, and that members who attend simply for the *éclat* that it may bring them, or to discuss rules of order and talk learnedly about by-laws and rules of procedure, are not those whose presence is most to be desired. That instead of dragging business questions into scientific debates, and interrupting every discussion with affairs of detail, these necessary matters should be condensed into as small compass as possible. The ideal scientific dental society will not, we fear, be attained until we hold dual meetings; one for the discussion of scientific questions, and the other for the politicians and quidnuncs whose highest ambition it is to shine in debates upon parliamentary law, and to become chronic constitution tinkers.

Shall we not at once set about the ripening of our thoughts, and each endeavor to bring to the meeting at Niagara some scientific fact, verified, not by a single instance, but by the results of a carefully studied and extended experience? Let us thoroughly prepare ourselves, and then enter into the debates, not for the purpose of gaining a polemical victory, but to discover and bring to light the truth. This would make of the meeting a grand success, no matter if but a score were present.

SCIENTIFIC ACCURACY.

It is very important that in the discussion of scientific problems we should be exact in statements. In his admirable article on "Aqua Calcis," in this number, Dr. Friedrichs quotes Prof. W. H. Morgan as follows: "Take rice, which has $\frac{91}{100}$ of one per cent. of saline matter in it, and if you sit down and make a simple calculation, there is more bone-making material in rice, if a man were to consume a quarter of a pound a day, than is necessary to build up and make the best osseous structure that a man ever had."

We had previously read this assertion, and given it credence without making the "simple calculation" referred to, but in reading the proof of "Aqua Calcis," that the statement might be verified or disproved, we put pencil to paper and find as follows: The proportion of the quantity of rice named would furnish only about

nine-tenths of a pound per year. The bones of an average man weigh about twenty-four pounds, so that it would take more than twenty-six years for the system to accumulate sufficient material for the bony system, to say nothing of the daily waste and repair and the lime salts present in other portions of the body, if the bones were made up exclusively of the earthy salts. This is not the case, but we will allow the figures to stand.

We agree with Drs. Morgan and Friedrichs in their deductions, but we wish them to be drawn from correct premises. The truth is, that one-fourth of a pound of rice would not be sufficient for the subsistence of an average human being, and even if it were possible to make this the only food, it would form but a small part of the source whence the organization could derive the materials from which to elaborate lime salts. A large amount of organic matter is taken in with the fluids that form our drink, and there are even other sources.

“THE DENTAL PROFESSION.”

Many dentists, who conscientiously believe that dentistry is a specialty in medical science, are accustomed to speak of “the dental profession,” “our profession,” “the profession of dentistry,” etc., in seeming ignorance of the fact that they thus separate it entirely from medicine. We frequently hear the claim advanced that dentistry is as much a part of general medical science as is Ophthalmology, or Gynecology. But who ever heard a specialist of either of these branches speak of “the profession of ophthalmology” or the “profession of laryngology?” Practitioners of these departments belong to the profession of medicine because they hold the medical degree, and not because they are specialists. Photographers and actors speak of their “profession,” and thus admit that they follow separate and distinct callings. It is improper to speak of Dermatology as a “profession.” It belongs to the profession of Medicine, but its practitioners are not admitted or acknowledged unless they have first graduated in medicine and hold the medical degree.

If dentistry is to be acknowledged as a department of medicine, all acknowledged dentists must have a medical diploma. No man will be accepted as a medical man without it, no matter what his attainments or knowledge may be. Medicine knows no diploma save that of a medical college. Ophthalmologists and Gynecolo-

gists have no distinct degree. If they had, they would separate themselves from the mother profession and form a profession of their own. Dentists who desire to be acknowledged as practicing a department in medicine must cease to speak of "the profession of dentistry," and enter the medical ranks in a regular manner. Those who believe that their vocation is an independent one, which should stand on its own merits, do right in alluding to "the profession of dentistry," and in sustaining our own separate schools and degree. Let us be consistent, and when we speak of "the profession of dentistry" comprehend what we are saying.

COCAINE.

When hydrochlorate of cocaine was first introduced in medicine the visionary enthusiasts at once declared that man was now master of all pain. They exaggerated its powers and, without knowledge of its full nature and properties, ignorant of the best way to manufacture or use it, they made applications to all tissues alike. Their solutions would not keep a week, and all sorts of adulterations were used. What wonder then that a reaction came and that cocaine was cast out?

We have lately been experimenting further with the drug, and are pleased with the results. Some of the beautiful crystals of Parke, Davis & Co., the manufacturing chemists, of Detroit, were procured, and fresh solutions made at the time of using. Injecting a four per cent. solution about the roots of an extremely painful and firmly set molar stump, after a prolonged struggle it was removed, quite without pain. We have operated on pyorrhœal cases, have removed living pulps, opened abscesses and performed other operations painlessly. With a ten per cent. solution we have obtunded very sensitive dentine, in the majority of cases.

So satisfactory were the results, that one of Parke, Davis & Co.'s cocaine cases, containing every requisite for the proper preparation and application of cocaine, was procured, and thus we are armed for every case which may present itself. Further knowledge of the character of the drug has convinced us that it is an essential in the case of every operative dentist who regards the comfort of his patients. Of all the manufactures there is none more reliable than that of Parke, Davis & Co.

BIBLIOGRAPHICAL.

WÖRTERBUCH DER BACTERIENKUNDE (BACTERIOLOGICAL DICTIONARY). By DR. W. D. MILLER, Professor in the Dental School of the University of Berlin. Stuttgart: Ferd. Enke, 1886.

Dr. Miller's contributions to bacteriological literature have been numerous and of great importance, and, we are proud to say, have been made largely through the pages of the INDEPENDENT PRACTITIONER. To his indefatigable industry we are now indebted for a glossary of the words and terms used in bacteriological parlance, which will prove of the greatest service to all students of the subject. It is by no means an extensive work, comprising only forty-three pages; nevertheless, we find concise definitions of all the peculiar terms and expressions used by bacteriologists, as well as brief descriptions of bacterial forms. For instance, taking at random: *Aspergillus fumigatus*, we find "A pathogenic species of aspergillus, with white mycelium and green spores; found in the lungs of men and animals, and in the human nose."

Leptothrix buccalis, "Long thread-like forms, which assume a blue color when treated with iodine and acids; found in the mouths of men and animals. Properties not yet known. Incorrectly held, by some, as the cause of dental caries."

Micrococcus of acute yellow atrophy of the liver. "Doubtful."

Syphilis bacilli. "3-7 micro-millimeters long, cells of various shapes (comma, S-form, spirilli, etc.), found in syphilitic secretions, chancres, etc. Alleged cause of syphilis. (Lustgarten.)"

These extracts will serve to show the character of the work, which, we are informed, is only the precursor of a much more pretentious volume, of similar but enlarged scope, now in preparation.

The errors in the present one are rather those of omission. Thus *spaltpilze* is defined, but its counterpart, *schimmelpilze*, is not. As a glossary for the use of those only reasonably familiar with German, it would seem more suitable to insert the description of the organisms now generally known in all lands as the *staphylococcus pyogenes albus* (seu aureus) under this term, rather than the clumsy German equivalents, *weisser* or *gelber traubencoccus*. Nevertheless, these trifles do not detract from the value of the work. We shall look forward with eagerness to the appearance of Dr. Miller's larger work.

MIGNONETTE. *An Ideal Love Story*, by Sangrée (Mrs. Linda Sangrée Allen). New York: G. W. Carleton & Co., 1886.

This delightful volume of three hundred and twenty-five pages has a peculiar attractiveness and charm for dentists, the authoress being the widow of the well-known Dr. William H. Allen, of New York City, formerly Professor of Operative Dentistry in the New York College of Dentistry, who died in October, 1882. Many will remember the charming woman who sometimes attended with him the meetings of the American Dental Association, and it is to her that we are indebted for the production of this book. The dedication contains a tender tribute to the memory of the lamented Dr. Allen.

Although this is the first published work of its gifted authoress, nowhere in its pages will the reader be reminded of the fact. The diction is smooth and flowing, the narrative connected and easy, and the interest maintained to the end. There is a vein of peculiar tenderness and grace running through the whole volume, as of a refined and gentle nature softened by affliction and exalted by sorrow. In all that interprets the language of the heart, it is delicately sweet and tender. This is especially true of the chapter which contains the love-making between Paul and Ethel. Even the incidents that are more commonly a part of French than American novels are invested with a grace that makes them seem natural, and its analysis of the sentiments of the heart is at times profound.

The book will make a charming ornament for the centre-table of the dentist's office, and we heartily commend it to the consideration of every one of our readers.

C. ASH & SONS' DENTAL CATALOGUE, 1886.

This is a catalogue of the different dental goods manufactured and sold by C. Ash & Sons, of London. This firm is becoming better known in America, and were it not for the high protection tariff levied on foreign goods, they would probably become as famous here, as in England and on the continent.

The book is a very beautiful specimen of the printer's art. Some of the illustrations of instruments and manufactures are really artistic in design and execution. The colored illustration of dental rubbers shows twenty-four different tints, and must have been passed through the press fifty times, to give all the colors, with the lettering and varnish. It is a beautiful specimen of color printing.

ANNUAL COMMENCEMENT OF THE DENTAL DEPARTMENT OF THE UNIVERSITY OF MARYLAND.

The annual commencement of the University of Maryland, Dental Department, in connection with the seventy-ninth annual session of the University School of Medicine, was held at the Academy of Music, Baltimore, on Wednesday, March 17th, 1886, the reading of the mandamus and the announcement of the graduates by Prof. Ferdinand J. S. Gorgas, Dean. The degree of D. D. S. was conferred by Hon. S. Teackle Wallis, LL. D., Provost of the University, upon the following gentlemen, all of whom had attended two full sessions of five months each, in separate years:

Amend, Emil, Germany,	Hartwig, Charles W., Maryland,
Baden, Frank A., Maryland,	Hoffman, John H., Virginia,
Basehore, Horace E., Pennsylvania,	Huggins, G. Allen, South Carolina,
Brugeille, Emile, France,	Lowell, William H., Pennsylvania,
Bookhart, Thomas W., South Carolina,	Lumsden, Frank H., Maryland,
Bruce, William W., West Virginia,	Macgill, Lloyd T, Jr., Maryland,
Campbell, Oscar J, Virginia,	Pleasants, Wilfred A., Virginia,
Chafee, Augustus H., South Carolina,	Proctor, Jr., W. Eppes, Virginia,
Diehl, John S., Pennsylvania,	Purnell, Ralph C., Maryland,
Emerson, Joseph G., Brazil, S. Am.,	Riley, James M, North Carolina,
Furman, Charles Luff, New York,	Shields, Lewis N, Texas,
Gasque, Elly A., South Carolina,	Sims, Benjamin F., South Carolina,
Greenawalt, A. H., D. D. S, Penn.,	Slocum, Frank E., New York,
Wall, Joseph A, Pennsylvania.	

The University Prize, gold medal, for the highest number of votes at the final examination, was awarded to William E. Proctor, Jr., of Virginia. Honorable mention was awarded to Wilfred A. Pleasants, of Virginia.

The address to the graduates was delivered by Col. William Allen, President of McDonough Institute.

The number of matriculants for the session of 1885-6 was ninety-one.

Although the number of matriculants for the session was larger than ever before, the number of graduates is smaller, on account of a strict compliance with the two-session rule, as a requisite for graduation, no less than twenty-two having been refused, who desired to graduate in one session, on five years or more of practice.

The annual meeting of the Alumni Association of the Dental Department, University of Maryland, was held at the Howard House, Thursday evening, March 18th. Dr. Charles L. Steel, of Virginia, presided. Prof. F. J. S. Gorgas addressed the meeting. Members of the class of 1886 and a number of the graduates of other colleges were elected members. The following officers were elected for the ensuing year:

President—Dr. R. D. Dodson, Pennsylvania.

Vice-President—Dr. J. Fournien, New York.

Secretary—Dr. J. S. Kloeber, Virginia.

Treasurer—Dr. I. H. Davis, of Maryland.

CHICAGO COLLEGE OF DENTAL SURGERY.

The fourth annual commencement exercises of the Chicago College of Dental Surgery were held at the First Methodist Church, Chicago, on Wednesday afternoon, March 31st, 1886.

The class valedictory was delivered by Robert E. Moon, D. D. S., and the address to the graduates by W. L. Copeland, M. D., C. M., M. R. C. S., Professor of Anatomy.

The number of matriculates for the session was eighty-one, an increase of thirty-one over the previous course.

The degree of D. D. S. was conferred on the following graduates by Dr. James A. Swasey, President of the Board of Directors:

Harry Fenn Carson, Illinois.

Louis Chismann, Illinois.

Gilbert Walter Entsminger, Illinois.

Ernst August Huxmann, Illinois.

Joseph Perry Mertes, Wisconsin.

Robert Ellsworth Moon, Indiana.

James Stewart, Illinois.

Ellsworth Otis Whipple, New York.

Emory Melvil Cheadle, M. D., Oregon.

Joseph Grant Emery, Illinois.

Frank Eshbaugh, Illinois.

Henry Fredrick Marcoux, Illinois.

Theodore Felix Molt, Illinois.

Otto Henry Staehle, Illinois.

Thomas Benton Wheeler, Illinois.

Alfred Rogers Wilcox, Illinois.

The Secretary made his annual report as follows:

During the college year, which closes to-day, we have had eighty-one matriculates, which, compared with last year, shows an increase of thirty-one.

Number of matriculates for the spring course, at the present time, forty-three.

Number of candidates for graduation, nineteen.

Number who passed a successful examination, sixteen.

Number of patients who have visited the infirmary for professional services, nine thousand and one.

These patients have had performed for them all of the usual dental operations, and many have been under treatment for surgical diseases of the mouth.

The number of instructors employed in the College is forty-two.

Of this number nine compose the regular faculty, eleven the Spring faculty, a superintendent of the infirmary, five demonstrators and sixteen clinical instructors.

During the last six months the number of lectures delivered was six hundred and twenty-four.

Number of clinical lectures, fifty-two.

Students entering this College must present evidence of having a good education in the English language.

An intermediate examination is required at the close of the junior year, for advanced standing and admission to the senior class.

The faculty having been frequently requested to advise young men wishing to enter the profession as to whether they should remain in a dentist's office a year before entering college, or begin at the college without previous training, have decided that some preliminary course is desirable, and to meet that want have organized the Spring course.

The Spring course is preliminary to the regular Winter course; it is, indeed, the beginning of the college year. It assumes that one entering the class is without any knowledge of dentistry, and yet it is prepared to meet the wants of students far advanced in their studies. It is intended to take the place of office instruction, and students without dental knowledge, as well as those advanced, who may wish to avail themselves of the great advantages offered for practical work and instruction, are earnestly advised to enter the Spring term. During the last week of each Spring term the student will be examined, and will receive certificates of attendance and grade of examination. This course cannot be considered as equivalent to a regular course of lectures in the requirements for graduation.

The growth of the College has been so rapid, and the increase in the number of students so great, that the Board of Directors have found it necessary to secure more commodious quarters. Accordingly, the building situated at the northeast corner of Madison street and Wabash avenue has been secured for a term of years. It has a frontage of sixty feet on Wabash avenue, and one hundred and sixty-five feet on Madison street, while the rear rests on Dearborn place, thus giving excellent light from three directions. It is supplied with passenger and freight elevators, and stairs in both front and rear.

The College will have a well-lighted and well-ventilated lecture room, faculty room and museum, a large room for the infirmary, with excellent light and having a capacity for sixty chairs, a large and well-fitted chemical laboratory, a mechanical laboratory and a complete physiological laboratory; also a dissecting room, patients' waiting room, students' cloak room and superintendent's room, together with closets, etc., etc.

When the work of fitting the building is finished the Chicago College of Dental Surgery will be in its appointments one of the most perfect and complete institutions of its kind extant.

T. W. BROPHY, Secretary.

DENTAL JOURNALS WANTED.

Cash will be paid for the following numbers of dental journals, or an exchange will be made with those who desire to complete their own files:

THE DENTAL REGISTER:

Vols. III. and VI., complete.

Vol. XXXVI., No. 1.

AMERICAN JOURNAL OF DENTAL SCIENCE (Third Series):

Vol. II., Nos. 6, 7, 8, 10.

" V., Nos. 3, 7, 11.

" VI., Nos. 2, 3, 5, 7, 10.

" VII., Nos. 2, 3, 7, 9.

" VIII., Nos. 6, 7, 10.

" XV., Nos. 3, 4.

" XVI., Nos. 1, 2, 4, 5, 6.

MISSOURI DENTAL JOURNAL:

Vol. I., No. 3.

" V., Nos 5, 8, 9, 11.

W. C. BARRETT.

ILLINOIS STATE DENTAL SOCIETY.

The twenty-second annual meeting will be held at Rock Island, commencing Tuesday, May 11th, 1886, and continuing four days.

REPORTS, ESSAYS AND DISCUSSIONS.

I. Report of Committee on Dental Science and Literature. Dr. Homer Judd, of Upper Alton, chairman.

II. Report of Committee on Dental Art and Inventions. Dr. J. Frank Mariner, of Ottawa, chairman.

III. Oral Surgery. Essay by Dr. John S. Marshall, of Chicago. Discussion opened by Dr. G. V. Black, of Jacksonville.

IV. Antiseptics and Disinfectants. Essay by Dr. A. W. Harlan, of Chicago. Discussion opened by Dr. Louis Ottogy, of Chicago.

V. The Retention of Pulpless Teeth in the Jaws. Essay by Dr. Homer Judd, of Upper Alton. Discussion opened by Dr. Geo. H. Cushing, of Chicago.

VI. Preparation of Pulp-Canals and Cavities for Filling. Essay by Dr. C. R. Taylor, of Streator. Discussion opened by Dr. J. A. W. Davis, of Galesburg.

VII. (Special Order for Thursday morning.) Report of Supervisor of Clinics, Dr. Frank H. Gardiner, of Chicago; and Discussion on Operative Dentistry and General Practice. Opened by Dr. J. N. Crouse, of Chicago.

VIII. Post-Graduate Study. Essay by Dr. J. D. Moody, of Mendota. Discussion opened by Dr. Garrett Newkirk, of Chicago.

IX. Oral Chemistry. Essay by Dr. J. G. Reid, of Chicago. Discussion opened by Dr. W. A. Johnston, of Peoria.

CHICAGO DENTAL SOCIETY.

At the annual meeting of the Chicago Dental Society, April 6th, the following officers were elected for the ensuing year:

President—Dr. Frank H. Gardiner.

First Vice-President—Dr. P. J. Kester.

Second Vice-President—Dr. W. B. Ames.

Recording Secretary—Dr. J. G. Reid.

Corresponding Secretary—Dr. A. E. Matteson.

Treasurer—Dr. E. D. Swain.

Librarian—Dr. A. W. Harlan.

Board of Censors—Drs. L. L. Davis, J. W. Wassall, B. L. Rhein.

Board of Directors—Drs. Geo. H. Cushing, J. A. Swasey, E. Noyes.

A. E. MATTESON, Corresponding Secretary.

CONNECTICUT VALLEY DENTAL SOCIETY.

The semi-annual meeting for 1886, of the Connecticut Valley Dental Society, will be held at Hartford, Conn., June 10th and 11th.

A cordial invitation is extended to all members of the profession to attend.

GEO. A. MAXFIELD, D. D. S.,
Secretary.

FIRST DISTRICT DENTAL SOCIETY.

At the annual meeting, held April 7th, the following members were elected officers for the ensuing year:

President—Dr. William Carr.

Vice-President—Dr. J. F. P. Hodson.

Secretary—Dr. B. C. Nash.

Treasurer—Dr. Charles W. Miller.

Librarian—Dr. J. Bond Littig.

Delegates to the Dental Society of the State of New York—Drs. Alfred R. Starr and F. Austin Roy for four years; Dr. Martin C. Gottschaldt for three years, to fill vacancy.

IMPOSTS ON DENTAL GOODS.

The foreign duties levied on imported dental materials are as follows:

	Per cent.		Per cent.
Artificial Teeth	20	Dental Rubber.....	25
Metallic Stoppings.....	45	Cement Stoppings.....	20
Gold or any Metal Stoppings.....	45	Gold for Plate, Wire, etc.....	45
Gold for Solders.....	45	Impression Wax.....	20
Artificial Teeth as Strings of Shades	45	Dental Instruments.....	45
Dental Tools.....	45	Mercury	10
Corundum	20	Dental Books.....	25
Burs and all Instruments used for the Dental Engine, including Engine.....	45		
All Appliances containing Wood or Glass in their composition.....	45		

WHO WILL NOW SAY that Buffalo is not a medical center? Four Medical Journals are published here. We have two Medical Colleges, where twenty-two professors and twenty-one lecturers dispense medical lore. Besides the regular city and county societies, there are now four private medical clubs, not including the homeopathic organizations.—*Buffalo Medical and Surgical Journal*.

Yes, and every alternate physician is connected with from one to four infirmaries, or dispensaries, or free hospitals, while the practitioner who has not secured an invitation to deliver a course of free medical lectures before some literary, or social, or self-improvement society, is very lonesome indeed. If every man, woman and child in Buffalo is not thoroughly informed—or misinformed—concerning the mysteries of medicine, it surely is not the fault of the newly-fledged M. D's who are thirsting for distinction as lecturers.—*Ed.*

SCHOOL PHYSIOLOGY. A young lady's composition in one of the fashionable schools was as follows: Food is digested when we put it in our mouths. Our teeth chews it and our tongue rolls it down into our body. We should not eat so much bone-making food as flesh-forming and warmth-giving foods, for if we did we should have too many bones, and that would make us look funny.—

After all, this is but little more absurd than some of the queer things one occasionally hears in society meetings and—tell it not in Gath—sometimes sees in certain journals.—*Ed.*

NO THINKING PERSON could confound the accomplished anatomical scholar, whose treatment of the mouth is based upon the principles of science, with the vulgar and greedy creature whose only object is to make a lucrative job for himself, and who is known willfully to damage the teeth of unhappy victims for the sake of extorting larger fees; but then the world is not made up of thinking people, and the quacks reap large harvests from the ignorance of the many. Fellows without other qualifications for their calling than a certain brutal strength and a certain empirical adroitness, and other fellows without even these advantages, and who declare that they neither expect nor desire to see their maltreated patients twice, manage by dint of puffing and impudence to gain large incomes at the expense of the fools who trust them. It is time that the real dentist should bestir himself.—*London Punch.*

FELIX WEISS, L. D. S., of London, in the appendix to Vernon Galbray, tells the following anecdote:

“Very shortly after the writer of this book entered the profession, he had occasion to visit a celebrated dental depot for the purchase of materials. While there, a well-known man of the Vernon Galbray type entered and requested to be attended to. The principal of the establishment, however, refused to serve him. ‘What do you mean,’ the empire cried, greatly incensed. I simply mean that I refuse to serve you, for a man who can so lower himself by disreputable practices, and disgrace the profession as you are doing, shall never have it in his power to say that I assisted him.

“The gentleman who so willingly sacrificed his own personal interests to the general welfare of the profession was the late Claudius Ash.”

DR. EDWARD BERDOE, in the *British Medical Journal*, says that he has found carbolic acid and other antiseptics extremely useful in the treatment of that form of dyspepsia that is accompanied with acid eructations and gas, with pain after eating. The dose recommended is, five to ten minims of the glycerole of carbolic acid (one part crystals of carbolic acid to four parts glycerine) in mint water or other convenient vehicle —

This form of dyspepsia is due to the stomach fungi of which Dr. Miller has given such a clear and interesting account in the last three numbers of the INDEPENDENT PRACTITIONER —*Ed*

OH! OH! That naughty *Weekly Medical Review* quotes from the March INDEPENDENT PRACTITIONER directions for obtaining a plaster cast of a nose, or other external organ, by painting the tissue over with melted paraffine, and thus wickedly says: “Be careful to prevent the paraffine from getting into the eyes of the victim, or the use of a ‘paraffine’ optics will be impaired.”

WOLVES are more often subject to hydrophobia than even dogs, and in Russia many persons are annually bitten by mad wolves. A number of Russian Mujiks, who had been bitten by a mad wolf, were recently subjected to treatment by M. Pasteur. One of them died, and in his malar bone was found a large splinter from a decayed tooth of the wolf that had bitten him.

BILLROTH, the eminent pathologist, writes the following on antiseptics:

1. Iodoform is the safest and most effective of all manageable antiseptics.
2. Moss, wood-turf, mould, and oakum are useful when there are discharges from the wound.
3. Corrosive sublimate in dilute solution is practically inert as an antiseptic to wounds, and renders the patient and surgeon alike liable to mercurial poisoning.
4. Carbolic acid, which is known to be dangerous in strong solutions, in very weak ones is as good for wound irrigation as clean water, but probably no better.

THE FIRST CHARGE to a jury of a newly elected justice was as follows, "Gentlemen of the jury, this is new business for me, as this is my first case. You have heard all the evidence; you have also heard what the learned counsel have said. If you believe what the counsel for the plaintiff has told you, your verdict will be for the plaintiff; but if, on the other hand, you believe what the defendant's counsel has said, then your verdict will be for the defendant; but if you are like me, and don't believe a word that either of them has said, then I'll be hanged if I know what you will do. Constable, take charge of the jury."

M. LAFFONT has studied the influence of nitrous oxide (anæsthesia being deep and prolonged) on respiration and the functions of the heart and liver. Sugar appears in the urine, and phenomena of asphyxia are observed. Respiratory movements increase in frequency and amplitude under the first inhalations, and at the moment of the anæsthesia the breathing is panting. The heart-beats are increased at the beginning, but soon become slow. M. Laffont therefore concludes that the state of anæsthesia induced by this gas is by no means harmless.

—*Progres Medical.*

DR. LEON F. HARVEY, of Buffalo, has retired from practice, his health being too precarious to permit of the cares of an active business. Dr. Harvey has long occupied a prominent place in dentistry, and it is a source of regret that he is lost to the profession. The elder Harvey—Dr. C. W.—was one of the pioneers of dentistry in Buffalo. Like his son, he attained to eminence in his profession, and still lives to enjoy the competency which was the reward of his skill and industry.

THE INDEPENDENT PRACTITIONER, with the June number, will come out in an entire new dress. The type in which the body of the journal has been set has become somewhat worn, and it will be cast aside and a new font employed. The publishers have never spared labor or expense when any means for improvement were suggested, and they believe that in its new dress this journal will as much excel in beauty as it has in excellence.

THE ST. LOUIS MEDICAL AND SURGICAL JOURNAL says that a gentleman who has little faith in anatomical study writes it an account of a wonderful case of intestinal obstruction, which he finally cured by passing a piece of rubber-tubing up into the rectum just as long as he could shove it in. He says he "passed nearly two yards of tubing into the receptacle," and demands "What I want to know is, is there such a thing as the illiasecle valve?"

DR. E. H. GRIFFIN, of New York City, reports the case of a patient, aged 32, who had a tooth, the crown of which projected into the nose. There was a congenital cleft of both the hard and soft palates. The root of the lateral incisor on one side was found in the gum tissue, while the crown, in full development, was in the nasal cavity. The patient said the tooth had been there for years, but had never given him any trouble, and he declined to have it removed.

THE FOLLOWING BILL has been introduced in the New York Legislature:

SECTION 1. A dentist who shall administer chloroform or ether to any person unless said dentist shall be a regularly graduated physician from some legally incorporated school of medicine and surgery, is guilty of a misdemeanor.

SEC. 2. This act shall take effect on and after the first day of September, eighteen hundred and eighty-six.

DR. A. W. HARLAN, of Chicago, is translating the later work of Magitot, which forms the concluding portion of Legros and Magitot's "The Dental Follicle," translated by the lamented Dean. Dr. Harlan is well qualified for the work, as well from his personal qualifications as from his long association with Dr. Dean.

DR. B. H. TEAGUE, of Aiken, South Carolina, has devised a new engine disk, made of paper and cloth, with a depressed centre, which greatly facilitates the dressing of fillings or teeth near the cervical border. They are covered with pumice or emery, and are a decided improvement over the old flat disk.

THE EFFECTS OF THE SOUTHWESTERN RAILROAD STRIKE are widespread. The *Iowa State Medical Reporter* for January arrived April 12th. The explanation given by the publishers is that their paper, of an unusual tint, is manufactured in St. Louis, and the strike interfered with its delivery.

THE LANCET AND CLINIC says there is a man named Smith living in one of the small towns in Michigan, who claims to be a dentist. A sign over his door, painted by himself, reads: "Teeth Extracted Without Enny Pane Laffin Gas Ten (10) cents a Ha Ha."

DR. D. G. BRINTON, the accomplished editor of *The Medical and Surgical Reporter*, has been chosen laureate of The Société Americaine de France, and has been awarded the medal of the society for his work on the aboriginal tongues of America.

DR J. SMITH DODGE, JR., uses instruments made of platinum wire for carrying medicated cotton into root canals. They are so pliable that they readily conform to the openings in the roots, and they neither oxidize nor blacken.

DR FRANCIS finds Donaldson's scrapers for removing debris from pulp canals exceedingly useful. They also do good service in removing bits of cotton that have been packed into roots.

AN EXCELLENT CEMENT for mending broken plaster casts may be made by dissolving celluloid in a saturated solution of camphor-gum in alcohol, until a paste is obtained.

"PREVENTIVE MEDICINE."

PROPHYLACTIC, ANTISEPTIC, DISINFECTANT,
LISTERINE
NON-TOXIC, NON-IRRITANT, NON-ESCHAROTIC

These properties added to the absolute safety of Listerine, its agreeable character and uniform strength, concentrates into this preparation every requisite of a perfect Prophylactic, and gives it undoubted superiority over all other Antiseptics, especially for internal use. The well-known therapy of the several ingredients of Listerine confirms its claims for more than merely mechanical germicidal properties.

Formula.—*LISTERINE* is the *essential Antiseptic* constituent of Thyme, Eucalyptus, Baptisia Gaultheria and Mentha Arvensis in combination. Each *fluid drachm* also contains two grains of *refined and purified* Benzo-Boracic Acid.

Dose.—One teaspoonful *three or more* times a day (as indicated). As a local application to ulcers, wounds and abscesses, or as a gargle, mouth-wash, inhalant or injection, it can be used *ad libitum*, diluted as desired.

The universal commendation of *LISTERINE* by Physicians and Scientists of all Schools throughout the United States, after five years' thorough Clinical Experience, has fully established its value in *PHTHISIS, DYSPEPSIA, DIPHTHERIA, CATARRH, DYSENTERY, SCARLATINA, SMALL-POX, ERYSIPELAS, TYPHOID* and other *FEVERS*; and as the most grateful and pleasant disinfectant and prophylactic for *VAGINAL INJECTIONS* in *OBSTETRICAL, LEUCORRHOEA, GONORRHOEA*, and, notably, for the hands, after Surgical and Gynæcological Operations.

This accumulated evidence of merit indicates its special adaptability to

DENTAL PRACTICE.

The testimony of its value in the treatment of **ORAL DISEASES**, in **Dental Practice**, is set forth in a special pamphlet on that subject to be obtained gratis on application, together with many Valuable Clinical Notes and Reprints by Eminent Surgical, Medical and Dental Authors.

☞ Three Reprinted Lectures on **CHRONIC NASAL CATARRH**, (illustrated by forty wood cuts,) by Prof. GEORGE M. LEFFERTS, M. D., New York City, are now ready for delivery, free of cost, to those who mention this Journal in making application.

LAMBERT PHARMACAL CO.,

New Office and Laboratory. - 116 Olive Street, ST. LOUIS.

TO MACKINAC.

SUMMER TOURS. PALACE STEAMERS. LOW RATES.

Four trips per week between Detroit, Mackinac Island, St. Ignace, Cheboygan, Alpena, Harrisville, Oscoda, Sand Beach, Port Huron, St. Clair, Oakland House, Marine City. Every week day between Detroit and Cleveland. Special Sunday trips during July and August.

Our Illustrated Pamphlets, Rates and Excursion Tickets will be furnished by your Ticket Agent, or address

C. D. WHITCOMB, Gen'l Pass. Agent,
DETROIT & CLEVELAND STEAM NAVIGATION CO.
DETROIT, MICHIGAN.

WANTED.

A situation as Mechanical Assistant. Age, 26 years. Ten years' experience. Address

"MECHANICS,"

Care of the Editor of the INDEPENDENT PRACTITIONER, Buffalo, N. Y.

TO QUALIFIED DENTISTS.

A Dentist long established in a first-class European city desires to sell out and return to America to spend his declining days. An excellent chance for a first-class man.

Address the Editor of the INDEPENDENT PRACTITIONER,
BUFFALO, N. Y.

J. R. MICHAEL'S PREPARED DENTAL FLOSS

Is the best and purest Silk Floss in use. It is full size and length—12 yards to the spool. Delivered free to any part of the United States.

For one dozen J. R. Michael's Prepared Dental
Floss, - - - 84 cents.

Address,

J. R. MICHAEL,

STEWART BUILDING, N. Y. City.

11-5-1/6-1/4

TO DENTISTS.

A GRADUATE of the Philadelphia Dental College would like a partnership with an established practitioner, or will work for a good salary. Can work the Sheffield Crown and Bridge System. Has no cash to invest, but will make it a good thing for the right man.

Address,

GRADUATE,

Care of the Editor Independent Practitioner,

Buffalo, N. Y.

DR. G. C. DABOLL

Desires to inform his professional friends that he is permanently located at

NO. 14 AVENUE DE L'OPERA, PARIS, FRANCE,

Where he will be at the service of any patients whom they may kindly refer to him.

4-6-AN4-1/4

AKRON DENTAL RUBBER

The materials of which this Rubber is composed
are prepared by new processes,
which insure

ABSOLUTE PURITY,

Resulting in a Product of Wonderful

DENSITY, FIRMNESS AND STRENGTH.

It is especially designed to meet the requirements of those who seek to produce the most perfect and artistic work.

It is exceedingly tough and light, and takes a beautiful polish.

Plates may be made very thin without danger of splitting or crumbling away about the edges.

It can be used with the best results for making partial lower dentures, an advantage which no other rubber possesses.

It has the unqualified approbation and endorsement of the profession everywhere, and never fails to give satisfaction.

It will cost you nothing to try it.

Send for samples and prices.

AKRON RUBBER WORKS,

AKRON, OHIO.

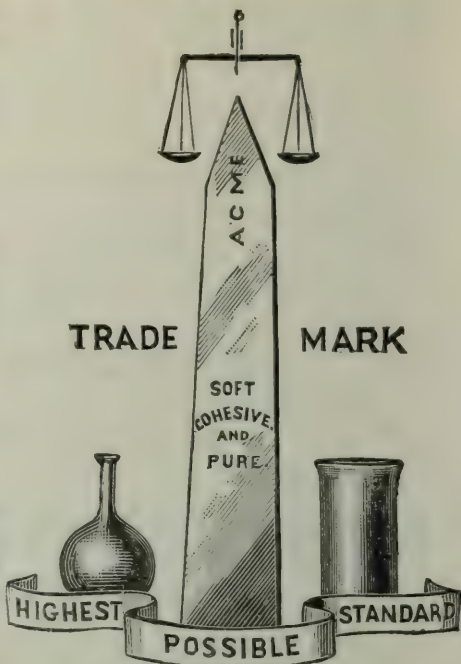
Sold by all Dental Depots.

11-5-AN-1

"ACME GOLD FOIL."

ABSOLUTELY PURE GOLD.

After twenty years as a practical Gold Beater and Refiner of Gold and Silver, and manufacturer of Gold Leaf in various shades and qualities, I am in position to state that there is no purer quality of Gold Foil manufactured, no matter how great the reputation of others, whether domestic or foreign.



Cylinders \$30.00 per oz.; $\frac{1}{8}$ oz. \$3.75. Acme Cylinders are made from our Acme Soft Foil, which is absolutely pure. The name Acme is given to this Gold for the reason that it is as pure as it is possible for chemical agencies or human hands to produce.

Acme Soft Foil, \$28.00 per oz.; \$3.50 per book of $\frac{1}{8}$ oz.

Crystal Surface, or Corrugated Foil, softest working Foil known, \$28.00 per oz.; \$3.50 per book of $\frac{1}{8}$ oz.

Acme Folded Foil, a convenient substitute for Cohesive Foil, easy to handle and anneal \$28.00 per oz.; \$3.50 per $\frac{1}{8}$ oz.

Appended a few of numerous Testimonials:

I think Henry's Gold the finest, *without any exception*, I ever used.

BROOKLYN, N. Y., Nov. 21, 1885.

FRANK P. ABBOTT.

ATHENÆUM, BROOKLYN, N. Y., Sept. 10, 1875.

MR. HENRY,

Will you have your agent call on me. I had a book ($\frac{1}{8}$ oz.) of your gold a long time since, and when the agent last called I told him I didn't know whether I liked it or not. Since then I found a package unopened, have used it and like it much.

Truly,

A. N. CHAPMAN.

NEW YORK, Aug. 22, 1885.

MR. T. J. HENRY,

Dear Sir,—Your agent left one book of your Corrugated Gold Foil for trial, and I would not be doing you justice without saying that it works equal to any Gold I have ever used. Please send agent with a further supply and oblige,

Yours, respectfully,

V. VAN VLECK, M. D.

284 6th Ave.

One of the many testimonials we receive almost every hour in the day:

NEW YORK, Sat., Nov 14, 1885.

Dear Sir,—Please send your man with Foil.

Yours truly,

N. M. BECKWITH,

21 West 37th St.

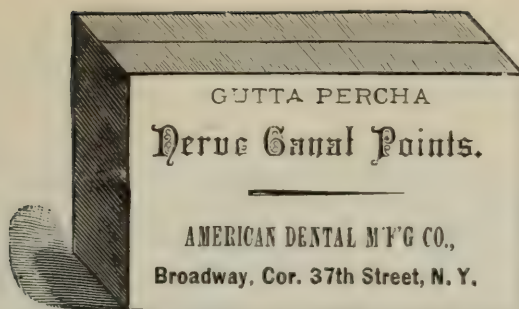
Gold will be sent free of cost to any part of the United States or Canada. Remittances must accompany all orders.

ADDRESS,

T. J. HENRY, GOLD LEAF FACTORY,
No. 16 Centre St., N. Y.

ESTABLISHED 1875.

P. S.—Dental Depots supplied at a liberal discount. Special Brands of Gold manufactured according to orders.

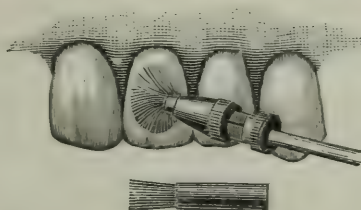


To those that have never seen or used the little Gutta-Percha Nerve Canal Points, manufactured by us for the past year and a half, we would say, that they have been well received, and extensively used by the profession generally. They are very carefully made and nicely tapered, being well adapted for the purpose for which they are intended.

The quality of Gutta-Percha from which they are made is the very best, being good and tough, permits bending in any shape, and easily worked.

PRICE PER PACKAGE OF 125 POINTS, 50 Cents.

SMALL POLISHING BRUSH.



The brush will be found very useful in cleaning teeth and finishing fillings; also in polishing the walls of cavities in preparing them for filling.

The brushes are made in three grades—soft, medium, and stiff—and adapted for use with either the Klump Port Polisher or the R. A. Port Polisher.

Price Per Dozen, - - - - - 50 Cents.

Price for R. A. Port Polisher, - - 30 Cents.

AMERICAN DENTAL MANUFACTURING COMPANY,

BROADWAY, Cor. 37th STREET,

CAULK'S FILLING MATERIALS.

ESTABLISHED 1877.

CAULK'S  **CEMENT**

AND OTHER DENTAL PURPOSES. EXCELLENT FOR LINING CAVITIES MOUNTING ARTIFICIAL CROWNS. FOR FILLING TEETH,

GRAY. YELLOW. PRICE, \$2.00. MEDIUM. LIGHT.

TWO COLORS.—Gray and Yellow, \$1.50 per Package.
 ONE COLOR.—Gray, Medium, Yellow, or Light, 1.00 " "

THIS COMPOUND NOW STANDS WITHOUT A RIVAL.

From Five to Seven Years' Test by Leading Dentists Throughout the World has Proved it to be All That Has Been Claimed for it.

For Mounting Artificial Crowns it has been highly recommended; is non-irritating, non-conducting, in harmony with tooth structure, has no shrinkage or expansion, and excellent for lining cavities and capping pulps. IT WILL HARDEN IN WATER OR SALIVA. It does not deteriorate with age. Two or more colors blended together (in mixing) will produce any shade desired. The liquid does not crystallize. One writer says it is the "King of Cements." The demand for it increases. If you have not already tried it, send one dollar for a package.

Fillings that have been standing in the mouth *over* three years, in comparison with other plastic material in the market, show not only its **SUPERIORITY**, but it has proved to be *more insoluble* than many of the so-called insoluble Cements. We have increased the quantity of liquid, and all bottles are lettered "*Caulk's Diamond Cement.*"

It has been pronounced by many to be *harder, more durable, more dense, easier to work, receives a higher finish, and gives better satisfaction* than others in the market.

**THE UNIVERSAL VERDICT IS THAT CAULK'S DIAMOND CEMENT IS THE BEST.
 A FAIR TRIAL WILL CONVINCE YOU.**

CAULK'S PAR-EXCELLENCE ALLOY

This GOLD AND PLATINA ALLOY is manufactured on a NEW PRINCIPLE.

None better made. Saves Teeth where others fail.

With one exception, we were the first to manufacture Amalgam containing Gold and Platinum, although we did not call it such, simply our trade name, Par-Excellence Alloy, which fully expresses the superiority of this combination of metals over others. It is the result of a long series of experiments, and has been in constant use for nearly ten years. By our new method of manufacture there is no **guess work**, the molecular change is controlled, making each and every ingot always and absolutely alike in its properties.

Price in $\frac{1}{3}$, $\frac{1}{2}$ and 1 ounce packages, per ounce, \$3.00; 2 ounces, \$5.00.

CAULK'S WHITE ALLOY

Has been greatly improved. Costing more to produce it.

There is NOTHING EQUAL or Superior to it.

Is of a peculiar grayish-white color. When amalgamated in the hand it works with a soft and velvety feeling. It is very DENSE, and so malleable that it can be malleted with the greatest ease. Has been highly recommended in Combination Fillings of Gold and Amalgam. When properly manipulated with PURE MERCURY it will retain its color under all circumstances.

Price, $\frac{1}{4}$, $\frac{1}{2}$, and 1 ounce Packages. per ounce, \$4.00; 2 ounces, \$7.00.

CAULK'S DIAMOND POINT STOPPING.

This form of Gutta percha having been in the market for several years, has stood the greatest test of all—that of time. It is regarded as the best preparation of its kind for filling teeth in the world.

We make THREE GRADES—MEDIUM (which is our regular and well-known D. S. P.), HARD and SOFT. Unless otherwise ordered, we always send Medium.

The Stopping is put up in *sealed envelopes*, and the Pellets and Cylinders in *sealed boxes*, each bearing a fac-simile of our signature.

Price, in $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$ and 1 ounce packages, per ounce, (reduced to) \$2.00.

CAULK'S HYDRAULIC PEBBLES.

This Cement differs from others, it being in the form of pebbles or granules. It is a chemical combination of some of the constituents of the Natural Tooth, and when properly manipulated has the bony like characteristics of such material.

Price, large package, \$2.00. Price, small package, \$1.00.

We make a specialty of manufacturing these materials for filling teeth.

Over Fifteen Thousand (15,000) Dentists are using these Materials throughout the civilized World. What better evidence do you wish of their Superiority and Excellence?

CAULK'S DENTAL ANNUAL for 1885-'86.

A Dental Hand-Book of Reference. Pamphlet of over 100 octavo pages.

Besides other Dental Statistics it contains complete text of the laws regulating the practice of Dentistry in 25 States and one Territory.

PRICE, 25 CENTS.

L. D. CAULK, Manufacturer and Proprietor, CAMDEN, DEL.

8-4-AN-2

SOLD AT ALL DENTAL DEPOTS.

COGSWELL'S Disk Carrier and Guard

MADE BY
CODMAN & SHURTLEFF,

167 Tremont Street,

BOSTON, MASS.

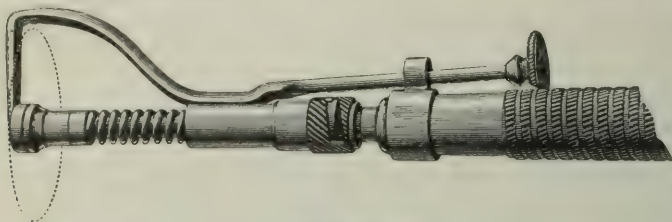


Fig. 214.

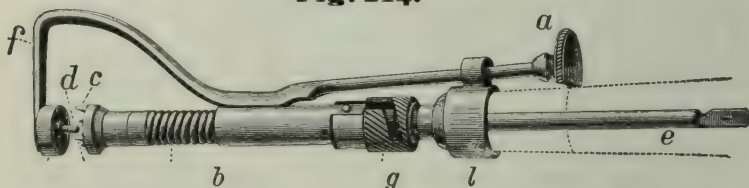


Fig. 214 A.

Patented Feb. 10, 1885.

This invention will be found indispensable by every dentist who values time, as it will enable him to attach the much used Disk to the Engine Mandrel in a small fraction of the time required by other methods.

It is represented in the figures as connected to the Hand-piece. In Figure 214 the holding device is represented as closed, the outline of Disk being indicated by circle of broken lines. In Figure 214 A, it is shown as opened by slight pressure of the thumb or finger against the knob *a*, ready to receive the disk. Upon relaxing this pressure the spring *b* closes upon the disk, which is centered upon *d*, perforated by four hardened steel points, *cc*, and thus securely held ready for rotation. The carrier is attached to the Hand-piece by insertion of the Mandrel *e*. A friction ferule *l* overcomes slight tendency of bracket *f* to rotate, and enables the operator to retain the guard opposite that portion of the disk where it will most effectually guard cheek, tongue, or other part from injury, or, prevent interference with rubber dam. At *g* is a locking sleeve, employed only when in the use of stiff disks there is a tendency to overcome pressure of spring *b*, and permit loosening of disk.

The Carrier will receive disks of $\frac{3}{8}$ inch diameter down to $\frac{3}{16}$ or even smaller. It may be rotated in either direction without loosening the disk, as occurs with the ordinary screw-held disk.

PRICE, \$2.50.

We are prepared to supply the Disk Carrier and Guard to fit the S. S. W. Hand-pieces, Nos. 5 and 6, Hodge's and Bonwill's Improved, at this price. Other Hand-pieces, if sent us, will be fitted to order at the same price, or at a moderate additional charge. *In ordering, state what Hand-piece is used.*

MESSRS. CODMAN & SHURTLEFF:

BOSTON.

Gentlemen,—The new Disk Carrier, with guard, which I have fully tested, is very satisfactory in all respects. I prefer it to any other pattern now in the market.

ISAAC J. WETHERBEE, D. D. S., *Pres. B. D. C.*

From J. B. Coolidge, M.D., D.D.S., Professor of Clinical Dentistry, in Boston Dental College.

MESSRS. CODMAN & SHURTLEFF:—

The new Disk Carrier which you sent me is the best. It will very soon save its cost in the time required for changing the disk. The guard will be found of great use in protecting the cheek, tongue, and rubber dam from the action of the disk. I would recommend it to every Dentist.

J. B. COOLIDGE.

From J. A. Watling, D.D.S., Professor of Operative Dentistry, Michigan University.

MESSRS. CODMAN & SHURTLEFF,

167 Tremont Street, Boston, Mass.:

Dear Sirs,—Your Disk Carrier received. After several careful trials, I feel justified in recommending it to the profession as a very useful and valuable addition to a dentist's outfit.

It is one of the best that I ever used. Is readily applied to the engine, and to replace the old disk with a new one requires but a few seconds.

The protector, while holding the disk firmly in place and being all that is necessary for the prevention of injury to the mouth, does not shut off the view of the filling to be finished.

It is indeed an instrument to be desired by all careful practitioners.

1-6-an-1

Respectfully,

J. A. WATLING, D. D. S.

THE Independent Practitioner.

VOL. VII.

JUNE, 1886.

No. 6.

Original Communications.

NOTE.—No paper published or to be published in another journal will be accepted for this department. All papers must be in the hands of the Editor before the first day of the month preceding that in which they are expected to appear. Extra copies will be furnished to each contributor of an accepted original article, and reprints, in pamphlet form, may be had at the cost of the paper, press-work and binding, if ordered when the manuscript is forwarded. The Editor and Publishers are not responsible for the opinions expressed by contributors. The journal is issued promptly, on the first day of each month.

CALCIFIC DEPOSITS IN TOOTH PULPS.

BY EDGAR D. SWAIN, D. D. S.

READ BEFORE THE ODONTOLOGICAL SOCIETY OF CHICAGO.

The pathological changes to which the tooth pulp is liable are many, and their importance commensurate to that of the organ itself. These changes vary in condition from those which are in the highest degree morbid and reparative, to those which entail the total destruction of the organ, with a corresponding injury to the nutrition and vitality of the tissue surrounding and most intimately connected with it, the dentine.

The changes which I shall discuss this evening come more directly under the head of calcifications, covering such as are better known as osteo-dentine, reparative dentine, and calcification islands or pulp stones; the last named are supposed to be the cause of prolonged and sometimes acute odontalgia or neuralgia, but just how to account for their presence, or how to diagnose their existence in a tooth pulp not sufficiently destroyed with caries to expose the affected member, is as yet an unknown quantity among the many other accomplishments of our profession.

This is a subject which has interested me and occupied my mind

more or less for several years, and I was gratified, during a recent visit to Peoria, to find that Prof. Black had commenced investigations of this subject which will, in time, give us much that will be new in this direction. I was also pleased to learn that, in a general way, my ideas on the subject were almost identical with those of that most careful observer.

During the year of 1879, when in the office of Dr. Cushing as assistant, with considerable time to dispose of, I procured from the Colton Extracting Company, as well as from other sources, three hundred and eighty teeth in various stages of disease, the majority of them being mere wrecks of once beautiful structures.

I now regret that my observations in this direction were not more carefully made, and that I did not study more thoroughly all the conditions apparent in these past-members of the oral cavity. But at that time I had no idea how valuable microscopic observations of so many diseased teeth would be to me, and, in fact, I had not the knowledge necessary to bring them to a successful termination. But to return to my specimens. I divided them into four different lots, my only guide in classifying them being the external evidences of disease. Two hundred were badly decayed, with pulps either largely exposed, or such as would have been had the carious matter been removed; nearly all had evidently been the cause of terrible suffering to their former owners. I selected another hundred, less diseased, pulps not exposed, except in a very few instances where the caries was penetrating, with less superficial territory involved.

The third lot consisted of sixty teeth, slightly carious, or showing worn or crushed proximal surfaces, evidences of exposed cementum to a greater or less degree, by absorption of surrounding tissue.

The fourth lot consisted of the remaining teeth, twenty in number, exhibiting few, if any, signs of disease, and had presumably been extracted in the preparation of mouth for dentures, or for the purpose of regulating remaining teeth. Understand, I was not looking for dentine of repair, transparent zones beneath the carious cavity, or for osteo-dentine, but simply for what we then called calcified pulps, or what are known as pulp stones. I proceeded then to break these teeth into pieces with a hammer and anvil, as carefully as possible, in order to preserve all fragments. You will see that the method was primitive and bungling, and not likely to result in any great amount of scientific information. The result,

however, was as follows: The first two hundred produced eighteen in which I found calcific deposits of greater or less size; the third hundred furnished me with eleven more fair-sized jewels; sixty, composing the third lot, added five more of the precious gems to my collection; and lot number four gave me an addition of three. Believing that some, less affected than the thirty-seven mentioned, had escaped my observation, I concluded it fair to estimate the number thus diseased at twelve per cent., which I now believe to have been a very low estimate. About this time, if I remember rightly, Dr. Cushing procured a microscope and kindly allowed me the use of it.

I concluded to search for evidences of reparative dentine, and having read that elephants were often wounded in the tusks, and that nature healed the wound, I visited several ivory turners in search of information, and to find, if possible, a tusk that had been so wounded. I succeeded, in a measure. Mr. Thomas, then and until recently a dealer in ivory, had a specimen which had, to all appearances, been wounded and repaired. While examining this tusk we discovered within its cavity portions of the pulp desiccated, and upon tearing it away I was delighted to find a calcific deposit within, about the size of a marrowfat pea, which Mr. Thomas presented to me, together with chips from the healed tusk. Slides prepared from this nodule presented, under the microscope, the same characteristics as those from human teeth.

Mr. Salter, under the head of pulp stones, states that he secured from a dissecting room thirty-four teeth, none of which were affected with caries, but all bore evidences of some disease or injury, either past or present.

These teeth he examined carefully, securing vertical sections from most of them. He discovered that every tooth showed signs of calcific deposits in its pulp. His observations certainly show how crude and imperfect were the experiments made by myself.

. In my labors with the microscope I reduced a goodly number of the pulp stones to sections, and was at first impressed by the close resemblance to normal dentine, but further examinations of most of the specimens disclosed conditions which I found were difficult to classify with normally-formed dentine. The apparent canaliculi were not those of regular formed or developed dentine, and they presented also a lamellated appearance, indicating that they were built up in layers from the center outward. Subjected to dilute

hydrochloric acid, the lime was removed, but the form was retained by the matrix or organic tissue entering into the composition of the deposit, some of which, when deprived of the lime salts and thin sections cut therefrom, presented very nearly the appearance of normal pulp tissue.

Let us consider various authorities upon the causes, appearances, etc., of the formation, as well as the different theories concerning their development. Hunter speaks only of the dentine of repair in teeth worn away by attrition, and makes no mention of pulp stones.

Oudet mentions two kinds of secondary dentine, which he divides into two classes—adherent and unattached; the latter, more than likely, referring to pulp stones. Both conditions he believed to be the result of irritation to the dentine by attrition.

Heitzman, in speaking of these deposits, says: “The process leading to their formation is by no means a mere deposition of lime salts, but a transformation of the pulp tissues. That they are partly, at least, identical with lamellated dentine, and are often devoid of dentinal canaliculi.”

He believes them to be the product of a low inflammation of the pulp tissues.

Wedle is of the opinion that these are formations from an inversion of the odontoblasts into the center of the pulp tissues, and explains the phenomena in these words:

“The outer surface of the pulp tissue is covered with odontoblasts, from the broad faces of which, directed outward, extend comparatively thick processes entering the dentinal canals; while the basis tissue of the pulp consists of loose connective tissue.” And he maintains the theory of inversion occurring in the layers of dentinal cells; that the calcareous grains are true concretions, and occur in connection with hard, new formations, but never enter into organic union with the original dentine; they are located within the mass of the pulp tissue and are calcareous or calcifications in the connective tissue.

Upon analysis of his theory we have the anomaly of the odontoblasts joined to the dentinal canals by strong processes projecting from their outer ends, enclosed within strong walls built by themselves, becoming inverted by a force which must exist within themselves, and depositing into the connective tissue calcareous grains intended for true dentine, as would be the case if the odontoblasts

maintained their normal position. Were this true we should find zones of dead or unsensitive dentine, which would be of great assistance in diagnosing the presence of these deposits within the pulp. On the contrary, teeth thus affected are often hypersensitive.

Salter says: "This change in the pulp must be looked upon as morbid in the lowest degree, being to a great extent the result of trivial causes, and never occurring unless the tooth has been, in some way, the subject of an injury or irritation; the pulp of a young tooth, perfectly matured, never exhibits this condition unless it has received some abnormal stimulation from morbid change or mechanical injury of the dentine, the most potent cause being caries." Heitzman, however, claims to have seen calcific nodules, or pulp stones, in perfectly developed bicuspid, extracted before they were fully developed.

Further, Salter conveys to the reader the idea that calcific nodules in dental pulps are almost as common as the pulps themselves. He describes pulps in which a great many appear, and the conditions which indicate the fusion of numbers of small nodules into one large one, sections from which have the appearance of numerous small lamellated bodies. He states further, that the whole of the tissues, cells, nuclei, connective tissue, blood vessels and a multitude of nerves are swallowed up by the process of calcification. I have consulted many other writers upon this subject, but consider these authorities quite sufficient for quotation. In reading a new work which Delafield & Prudden published this year (1885), I came across the following, which convinced me that the theory I am about to present was not without foundation. I will use their own language: "In calcareous degeneration there is a deposit, either in cells or in the intercellular substances, of granules composed chiefly of phosphate or carbonate of calcium: these particles, when abundant, give hardness, brittleness and a whitish appearance to the affected tissue. Sometimes large lamellated concretions are formed, usually at the seat of some old inflammatory process. Calcification occurs in parts of tissues which are dead, or in a condition of reduced vitality, the result of some antecedent morbid process, usually of an inflammatory nature." Calcific deposits, such as have been spoken of, are not confined to the tooth pulp alone. I may instance the phlebolite, a calcareous concretion found in the veins, which, according to Paget, is formed in the

blood by a union of lime salts and albumen. From my observations I have arrived at the following conclusions as to their appearance, formation, and the causes which produce them :

First, pulp stones are never connected with the dentine, but there always intervenes between the two a layer resembling a dead or desiccated membrane. This membrane evidently consists of the layer of atrophied odontoblasts, and is consequently unable to extend the work for which they were intended, namely, to appropriate and deposit the lime salts which the circulatory system continues to supply. As a consequence, the salts thus liberated by osmosis are organized into islands of calcification in the body of the pulp, surrounding the fibers and vessels, thereby giving the appearance sometimes observed of dentinal canals. This class of pulp stones is not to be confounded, however, with another which so closely resembles true bone, always presenting lacunæ. These last are the result of a transformation of connective tissue cells into osteoblasts, and sometimes to the extent of entirely obliterating the pulp cavity. I have a specimen of this character, and have seen others which have led me to conclude that this kind of pulp calcification never occurs in a fully developed tooth, but commences at that period when the apical foramen is large, and the impetus or exciting cause is derived from the osteoblasts or bone builders, which produce the cementum. Their influence over connective tissue cells transforms them into osteoblasts, which appropriate the lime salts intended for dentine and obliterate the pulp cavity by filling it with cementum.

That insoluble salts of lime are altered in their behavior by association with different organic compounds, was first discovered by Ramée, and has since been further demonstrated by Prof. Harting, of England.

It is well known that if a soluble salt of lime be slowly mixed with a solution capable of precipitating the lime, the result will be that the salts of lime will be thrown down as an amorphous powder, and sometimes in minute crystals; but if gelatine, albumen, or other similar compounds be added, the form and physical character of the precipitated lime salts are materially changed.

M. Ramée found that if carbonate of calcium be slowly formed in a thick solution of albumen, the resultant salt assumes the form of globules, lamellated in structure. This experiment I have

verified, and have been surprised at the close resemblance of these globules to a large number of pulp stones heretofore examined under the microscope.

This experiment is simple, and may be easily accomplished by any one who desires. Take a bottle of calcium water, thickened with albumen or common gum water; then breathe through a glass tube into the mass; the carbonic acid will precipitate the lime. Another method for the experiment is this: Secure a bottle of fresh carbonic acid water from any soda fountain, this to be used in lieu of the breathing. This must be added very slowly and carefully until the lime water assumes a milky appearance, which indicates the presence of carbonate of lime. If too much carbonic acid is present the bicarbonate is formed, and the experiment will prove a failure. When the mass assumes a milky appearance cork tightly and put away. In a few weeks, if the experiment be successful, there will be found at the bottom of the bottle a number of granules, and occasionally one will discover a mulberry-formed mass among them which, upon examination, appears to be a blending together of the numerous smaller globules, such as is described by Salter as sometimes found in pulp tissue.

Harting, in his observations, found that the organic material used in his experiments had also changed its character. He named the globules formed calcospherites, and learned that when subjected to the action of acid the lime salts were removed, but that they still retained their form and were then extremely resistant to the action of acids, alkalies and boiling water. He says: "For this modified albumen I propose the name of calcoglobuline, because it appears that the lime is held in some sort of chemical combination, for the least traces of lime are retained very obstinately when calcoglobuline is submitted to the action of acids. And I am satisfied," says he, "that the calcospherite has a true matrix of calcoglobuline which is capable of retaining its form and structure after the removal of the lime."

Mr. Chas. Tomes informs us that spherical forms exactly similar to those artificially produced by Harting are to be constantly seen around the thin cap of forming dentine.

Robin and Magitot describe them as occurring abundantly in the pulps of growing teeth, both human and herbivorous.

From what has been said you may readily understand the theory

which I have evolved regarding the formation of the islands of calcification in the pulps of the teeth, namely; First, that the odontoblasts have become atrophied and are no longer capable of performing their normal functions.

Second, that the circulation at the time of their formation is normal and the necessary amount of lime salt is conveyed into the pulp when required either for the purpose of building dentine in tooth development, or dentine of repair, but the atrophied odontoblasts being incapable of appropriating them for either purpose, it is therefore deposited within the tissues of the pulp.

Third, that the lime salts having been passed by osmotic forces through the coats of the vessels, and not being appropriated, and no endosmotic force being present (because of the otherwise normal conditions), meeting with the necessary organic material in the form of albumen the two unite as in the experiment, and the production is a calcospherite.

It is a well established fact that fractured crystalline bodies will, under proper conditions, repair the injury; therefore, it seems to me that this fact and the experiments of Harting prove that there is something like a universal property of bodies that are naturally and orderly constructive, and that elements which enter largely into living organisms are controlled by certain existing laws which exert themselves with or without the force we call vitality; consequently, we are enabled to produce artificially the same conditions which we observe and attempt to explain upon the theory of a present vital force.

TESTING THE POWER OF ANTISEPTICS.

BY DR. W. D. MILLER, BERLIN, GERMANY.

From time to time experiments, purporting to determine the disinfecting power of specified substances, appear in the dental journals, which, so far from accomplishing the object desired, show so great a want of knowledge of the ordinary methods used in determining the strength of antiseptics, that a few words on the subject may not be out of place.

A writer in a recent number of this journal, for instance, concludes that a given substance has no disinfecting power because it produced no chemical change upon sulphuretted hydrogen.

A disinfectant, according to the definitions of Koch, Fluegge and others, is a substance which retards the development of micro-organisms, and in proper concentration kills them: for most purposes the more inert the substance is chemically, the better; in fact, the chemical action of many antiseptics is one of the greatest impediments to their free use in medicine. Even for disinfecting rags, clothing, sick-rooms, etc., we do not call for chemical changes which would be absolutely harmful, but simply for destruction of germs.

A very simple method of determining the strength of any antiseptic, as well as its rapidity of action, is the following, which will also be found substantially in previous numbers of the INDEPENDENT PRACTITIONER:

(1.) To determine the lowest degree of concentration necessary to prevent the development of a given fungus, prepare a large number of tubes, each containing, say, 5.0 cc. of a sterilized nutrient solution (say beef-extract 1.5, peptone 1.5, sugar 1, water 100). Add to the first tube a sufficient quantity of the substance to make its strength 1 to 10. To the second tube add enough to give a strength of 1 to 20, then 1 to 50, 1 to 100, 1 to 1000, etc. Infect these solutions with the fungus to be tested, and then keep them at a temperature favorable to its development. In all tubes which remain clear, the concentration is sufficiently strong to prevent the development of the fungi; in those which become cloudy, not. By the first experiment we establish the fact that the limit lies between certain numbers, say 1 to 4000 and 1 to 5000. Repeating the experiment with 1 to 4000 as highest and 1 to 5000 as lowest concentration, we find the limit somewhere between 1 to 4500 and 1 to 4600; a third experiment will then determine at just what concentration development ceases.

To determine the rapidity with which a certain substance (in solution) acts, proceed as follows: Place a few drops of the substance to be tested in a sterilized watch-glass; add to this, on a loop of platinum wire, a minute drop of a bacterium culture, stirring it quickly with the wire; then transfer, at given intervals, a very small drop to culture tubes, which keep at a favorable temperature for the development of the fungi. If the exposure was sufficiently long to devitalize the fungi the tubes will remain clear; otherwise they will become cloudy in a few hours, or in two or three days at most.

See also INDEPENDENT PRACTITIONER, 1885, page 412.

SCYTHIAN DENTISTRY.

BY W. H. EAMES, D. D. S., ST. LOUIS, MO.



One of the earliest records of a dental operation is found upon a Scythian vase discovered in an immense tumulus or burial mound, situated about four miles to the westward of Kertch, a small town on the Crimean peninsular, at the entrance of the Straits which join the Black Sea with the sea of Azov. Historically, we know but little of the Scythians beyond the meagre facts recorded by Herodotus, but in the almost numberless tumuli which are found upon the Crimean coasts are preserved a most graphic record of their daily lives, manners and customs, in the funereal vases and other objects deposited in the final resting places of their dead.

About the sixth century B. C., a Greek colony from Miletus was founded upon the shores of the Bosphorus, and called Panticapæum. Constant communication was kept up between the colonists and the cities of Greece, and a great and powerful community arose, accumulating vast riches and introducing the unapproachable art of Greece, and adapting it to the uses of the nomadic Scythians as well as the more civilized people who created what is known as Greco-Scythian art.

The richest of the numberless tumuli so far opened is one called the Koul-Oba, which was examined under the direction of the Russian government, and although the greatest care was taken to preserve the precious relics, the larger part was stolen and never recovered. It has been estimated that out of a total weight of one hundred and twenty pounds of solid gold found, the government recovered but fifteen pounds.

The Koul-Oba was a royal tomb, and in a spacious apartment, constructed of large blocks of stone, was found the mouldering remains of a king, his queen or favorite wife, his servants, horses, and surrounded by his treasures. The body of the king lay upon a superb couch composed of massive beams of carved and painted Yew-wood, over which was a canopy. These paintings are purely Greek in character, and are perfectly preserved, notwithstanding the more than twenty centuries which have elapsed since their execution. Near the splendid wooden Sarcophagus of the king were the remains of a woman, doubtless his queen. On her head was a mitre-shaped diadem, and at her feet a small vase of electrum, upon which is embossed a frieze of characteristic episodes of Scythian life. Electrum, an alloy composed of gold with a fifth part silver, was highly valued by the Greeks, its color being paler and more luminous than gold. Upon the vase are four groups in exquisite repousse work, giving incidents in the life of the same person. The king is clad in the Scythian costume, a tunic belted at the waist, and full trousers tucked in his boots; which is almost identical with the Russian costume of to-day. In one group he is listening to the report of a warrior kneeling before him, in another he is bending a bow, in the third his wounded leg is being dressed by an attendant, and the last, as before stated, is one of the earliest known representations of an operation in dentistry. The king is half sitting, half kneeling, while the Scythian dentist is extracting a tooth from the left side of the jaw. It is reasonable to suppose that this represents an actual incident in the life of the skeleton found in this tomb. In the skull, now deposited in the museum at Kertch, the first and second left lower molars are missing, and the third molar is badly decayed. The presence of an alveolar abscess connected with these lost teeth at some period of life is shown by the condition of the alveolar process in this region.

The only clue to the identity of the powerful monarch here en-

tomed is an inscription of three letters upon an ornament, in which it is claimed by some that they recognize the initials of a Bosphorus King, Pairisades, the son of Satyrus, who reigned about 310, B. C.

In 1880, Earl Granville, British Secretary of State for Foreign Affairs, brought before the Russian Ambassador to London the request of the Committee of the Council on Education, to secure for the South Kensington Museum, copies of some of the numerous examples of Russian art contained in the Imperial collections of Russia. The request was readily granted, and many beautiful selections were made for reproduction. These have recently been completed and placed at South Kensington, and a most complete handbook of Russian art has been published, which is intended not only as a guide-book to the Museum, but to give general information upon a subject heretofore but little known. It is from this work that the substance of this article has been derived.

A RETROSPECTIVE GLANCE.

BY HERBERT A. BIRDSALL, D. D. S.

READ BEFORE THE EIGHTH DISTRICT DENTAL SOCIETY OF THE STATE OF
NEW YORK.

Beginning the study of statesmanship, or of political economy, the student is first directed to search history, and there trace out the formation and growth of civil institutions, from the simple associations of a primitive community through the various grades of their evolution unto the complex forms which present themselves to our view in modern society. May not a professional man in the same way strengthen his hold upon his position by finding how he came by it? To attain to a true understanding of a subject, perhaps there is no better place to begin than by turning back to find its beginnings, and also to find by what processes of evolution it has been developed.

It has been my good fortune to have access to a typical dental library of fifty years ago. It is the purpose of this paper to show, or perhaps rather to suggest, the relation of the dentistry of fifty years ago with the dentistry of to-day.

But to digress a moment. When the learned and erudite Knickerbocker wished to give us an account of the early history of Man-

hattan Island, in order that there might be no mistake in the premises he began with chaos, got together material for a world, which was suitably placed in its orbit; after which, by having man properly created, multiplied and distributed, he was able to come by easy and graceful steps to the telling of his story, sure of the ground behind him. This remark is thrown in as a sufficient precedent and excuse for turning back to glance over the longer tract of the more distant past.

“In the beginning,” then—to use a well authorized expression—when the arts and sciences were entering the race, dentistry seems to have started early, and to have started well. The mummies of the ancient Egyptians have brought forth teeth filled with gold,* and specimens of bridge-work—which seems to be about the oldest form of dentistry—have been found both in Egyptian and Etruscan tombs. It is probable, also, that the Phœnicians, Arabs and Greeks had made some progress in the art, if not in the science of dentistry. But medicine and surgery in all their branches, having early deviated from their true course, were soon given over to alchemy, necromancy and magic. Men sought not after knowledge where it was to be found, but sat gazing into the smoke that perchance they might discern a form, or experimented with all manner of devices in search of a panacea. Dentistry fell out with the rest, and what little had been known was lost. Teeth were no longer considered in the light of organs to be rescued from destruction, but as amulets for the warding off of evil, or under varying circumstances, as omens of good or bad.

Through mediæval history the figure of darkness so frequently applied to affairs of the time in their social and political aspect, seems from the dental standpoint still more appropriately to apply. Dental defects and deformities are mentioned in tones of pity because they are considered without remedy. The familiar proverb which had its origin at that time, that a bad tooth was considered of all things the most desirable to be rid of, lets us into the secret. It was not until within the past hundred years that any form has been discerned in the smoke.

Having returned, then, to our subject, let us see what it contains. Let us first take the matter of theories concerning the causes of caries. Up to the time we have chosen to discuss.

* This remains to be proved. We hope that Dr. Van Marter, of Rome, who has so exhaustively studied Etrurian dentistry will soon perform the same office for Egypt.—EDITOR.

the two theories that divided the adherents were those of Fox and Bell. Briefly stated, they are as follows: From some cause, not very clearly made out, inflammation is excited in the membrane lining the cavity of a tooth (cavity with them means pulp-chamber), and in such inflammation separates from the bone with which it is in contact. Death of that part of the tooth speedily follows, and caries is the result. The Bell theory, like the other, rests on inflammation; but here it is not in the internal membrane, but in the tooth-bone itself. A blow, or the pressure of the teeth themselves against each other at their approximal surfaces, causes inflammation of the tooth-bone beneath the enamel, and gangrene and caries follow. It will be seen that the theories are alike, in that they both depend on inflammation, and both make caries to originate from within, making its way to the exterior. But at about our focal date there is a revival of investigation and discussion on this subject, and Robertson appears with a new theory. It was this: That decay was a purely chemical process, brought about by the decomposition of food and the presence of acid between and around the teeth. But to fortify himself he thought it necessary to hold the position that the teeth were extraneous and essentially unorganized bodies, and were in no sense to be considered as vital organs. This last theory seems to have been the generally accepted one at the time. Dr. Spooner, who was a very intelligent writer, says this: "There are two kinds of decay in teeth, which may be designated as internal and external. The first appearance of internal is marked by a peculiar dark-bluish spot which shines through the transparent enamel, the integrity of which appears to be perfect, while the first appearance of external caries is marked by erosion of the surface of the enamel."

As regards remedies, let us turn again to our library. Dr. E. Parmley says that "the benefits to be derived from plugging the teeth are so important that it is impossible to recommend it too strongly upon the public." In Dr. Spooner's book, published in 1836, just fifty years ago, I find the following. After hedging on all sides against quibble or contradiction, he lets slip this assertion: "The utility of plugging teeth for the cure of caries, as practiced by scientific dentists, is now known and appreciated by many persons; by more it is not sufficiently known or understood, while others distrust its utility altogether." Then follow several pages of

facts and arguments to prove that teeth can be plugged to the advantage of the patient.

Of materials for stopping teeth let me glean a little from Kœcker. "Lead, tin and silver," he says, "are used for the purpose, but on account of the fact that they soon corrode he finds them more or less objectionable. Platina is more suitable than the above mentioned, but in consequence of the necessity of amalgamating some other metal with it to make it malleable, it is by this process rendered insufficient for the purpose." He finds it objectionable also because of the discolored appearance it gives the tooth, which is apt to mislead the dentist in the future into the idea that the tooth is still under the influence of decay.

"A composition," he continues, "is used by some in this country, and generally in France. It is composed of bismuth, tin and lead. It melts at a heat of boiling water, and is called fusible metal."

The next few paragraphs are taken up with showing the objections to this preparation. Let us look at some of them. They are interesting. After making the ordinary objections of corrosiveness, etc., he says that "the using of the metal at such a high degree of temperature destroys the vitality of the tooth;" and, as though that were not enough, he adds another, to the effect that "not only is the vitality of the tooth destroyed, but frequently also the whole surface of the healthy bone with which the tooth comes in contact;" an objection, it seems to us, which might well cause a moment's hesitation.

On the subject of cement filling materials Dr. Spooner, in his rather flowery language, has this to say:

"Various substances in the form of cements have been used in past ages, and are still, for the purpose of filling decayed and hollow teeth. All such substances are of very little use, and are avoided by honorable and well-informed dentists. Cements are composed of earthy substances which have the property of hardening under water, mixed with filings of metals, usually of zinc, in order to make them harder. Also of metals amalgamated with mercury. Any person at all acquainted with the principles on which a hollow tooth must be plugged, that it may be cured, will at once perceive that no cement can ever be devised that shall prove of much utility for the purpose. In order that carious teeth may be cured it is necessary that the decay be removed and the cavity be plugged air-

and water-tight. Cements do not, nor can they ever be devised to, effect this object." Rather a dangerous dip into the future.

Filing the teeth seems to have comprised a large part of the operative dentistry of the time, and occupies much space in their discussions.

On the subject of *Pyorrhœa Alveolaris* I find one or two short chapters, entitled "Scurvy of the Gums," which bear but slight resemblance to a modern discussion of the subject.

And last, but not most unimportant, I turn for information upon the subject which demands so much of our attention, and which fills so large a place in our discussions: *Alveolo Dental Abscess*. About all I can find upon the subject is in one little chapter in the back part of Dr. Spooner's book headed "Gum Biles." Spelled as pronounced, b-i-l-e-s. On reading it I find that sometimes they are not "Gum Biles" at all, but that they frequently present themselves upon the cheek and neck, making offensive ulcers, or healed, unsightly scars. The only remedy is extraction.

Truly, from the smoke into which our fathers gazed so intently, yet saw but dimly, or not at all, the form, has appeared the full form of a genius who has done wonders, beyond the dreams of the magicians.

SANITAS OIL.

BY E. S. TALBOT, M. D., D. D. S.

In the April number of the *INDEPENDENT PRACTITIONER* Dr. Harlan quotes from the opinions of several eminent gentlemen to substantiate his statement that Sanitas Oil is a disinfectant, and reports experiments made by Prof. Chas. B. Gibson, of the College of Physicians and Surgeons. With all respect for Dr. Gibson's acknowledged ability as a chemist, I found that the result of his experiments only confirmed my opinion, as any disinfectant which requires from twenty-four to thirty-six hours to make an impression on a substance rates so low in the list of disinfectants that its good-for-nothingness would make it useless. I think we are all agreed "that a disinfectant is capable of combining with the gases and other products of decomposition, and so removing it." I have made experiments with Sanitas, both sealed and unsealed, with and without a reagent. Some of them have covered from two to three months time. I procured the Sanitas from the importers, Sargent

& Co., and the S. S. White Dental Manufacturing Co., Chicago, and both informed me that this was the genuine article of commerce, manufactured in England. I admit it to be essential to seal the bottles or cavities, as the H_2S would otherwise escape free. Contradicting Dr. Harlan's definition of a disinfectant, even when sealed, the odor of H_2S is very apparent upon unsealing, the Sanitas having acted so slowly, if at all, that the sulphuretted hydrogen responds to the reagent. In experiments where a reagent (acetate of lead) was used, apparently no chemical change took place, further proving that Sanitas Oil had not "entered or united chemically with H_2S ," consequently was not a disinfectant. I procured two specimens of Sanitas, one from E. H. Sargent & Co., and one from S. S. White's Dental Manufacturing Co., which I sent to Prof. Haines for examination as to their disinfecting powers, and I present below his reply:

CHICAGO, May 5, 1886.

EUGENE S. TALBOT, M. D., D. D. S.

Dear Sir:—The two specimens of Sanitas Oil placed by you in my hands a few weeks since, have been subjected to tests to determine their disinfecting powers, with results as given below:

A solution in distilled water of sulphuretted hydrogen (H_2S) was prepared of such strength that each volume of the liquid held in solution exactly three volumes of the gas. Four wide-mouth bottles, each of one ounce capacity, were procured, and ten cubic centimeters of the sulphuretted hydrogen solution were placed in each. To the first of these bottles (labeled No. 1), five cubic centimeters of the Sanitas Oil (bearing E. H. Sargent & Co.'s label) were added; to the second (No. 2), a like quantity of ordinary oil of turpentine; to the third (No. 3), the same amount of hydrant water; and to the fourth (No. 4), the same quantity of the officinal liquor soda chlorate (U. S. P.). The sulphuretted hydrogen was at once wholly destroyed in No. 4, no trace of it being discoverable by any test, thus illustrating the action upon H_2S of a well recognized and thoroughly active disinfectant. In the other three bottles, however, the sulphuretted hydrogen remained strongly marked. They were accordingly stopped with tightly fitting corks, and were vigorously shaken every two or three hours during the working part of the day, the corks being removed for a few seconds both immediately before and after the agitation, so as to allow the free entrance

of air. Twice each day, morning and afternoon, sulphuretted hydrogen was tested for in each bottle, by moistening a strip of filtering paper with a ten per cent. solution of acetate of lead and suspending it above the liquid for half a minute. When no darkening of the acetate was observed upon applying this test, the sulphuretted hydrogen was said to be destroyed, and the time was noted. At the end of three and one-half days the sulphuretted hydrogen had disappeared from No. 2 (to which oil of turpentine had been added); at the end of seven and one-half days H_2S was no longer present in No. 3 (to which hydrant water had been added); while the destruction of the sulphuretted hydrogen was not complete in No. 1 (the one containing Sanitas Oil) until nine days had passed by.

An exactly similiar series of experiments was performed with the other specimen of Sanitas Oil you sent me (the one bearing the label of The S. S. White Dental Co.), except that *ten* cubic centimeters of Sanitas Oil, of oil of turpentine, of hydrant water and of chlorinated soda solution were used instead of the *five* cubic centimeters of these substances that were employed before. The results were quite similar to those obtained in the first experiments. In No. 4 (to which the chlorinated soda was added) the sulphuretted hydrogen was destroyed at once; in No. 2 (containing oil of turpentine) it had disappeared at the end of four days; in No. 3 (to which hydrant water had been added) it was gone in seven days; and it was not destroyed in No. 1 (containing Sanitas Oil) until the end of the ninth day.

The conclusion to be drawn from the above experiments is obvious. Sanitas Oil (at least the two specimens of it I received from you) is possessed of exceedingly feeble disinfecting powers, being almost infinitely less active than solution of chlorinated soda, being less energetic than oil of turpentine, and is surpassed in its activity even by ordinary water.

Yours respectfully,

WALTER S. HAINES, M. D.,

Prof. of Chemistry in Rush Medical College.

The experiments made by Prof. Haines corroborate mine. They have all been conducted with the Sanitas of commerce in this country. We have no means of knowing the variety of Sanitas experimented with by the gentlemen abroad, mentioned by Dr. Harlan.

Reports of Society Meetings.

CENTRAL DENTAL ASSOCIATION OF NORTHERN NEW JERSEY,
MEETING AT NEWARK, APRIL 13, 1886.

REPORTED EXPRESSLY FOR THE INDEPENDENT PRACTITIONER.

Dr. J. L. Osmun read a paper entitled "Suggestions in the Use of Nitrous Oxide Gas."

Dr. W. H. Atkinson—I think we could have no better argument to sustain my prejudice against the use of anæsthetics than the reading of this paper. It has not said one word about the necessity of administering nitrous oxide, or any other agent that will render any one insensible. That is the first step that should be taken into consideration. Is it necessary? I have yet to see the case where extraction of teeth was the object, when it was necessary. The use of it arises from the blackness of the darkness of ignorance that pertains to the anatomy and physiology and pathology of the teeth, and it is because of their familiarity with this abomination that men have not held it in the contempt which it deserves. The sin of the dental profession to-day is the extraction of teeth, and the insertion of the wretched substitutes which they laud to the skies. If you could have heard the experience of one of my patients, an old lady, as told in her own language, I am sure you would get down on your knees, with your hands in your mouths, and your mouths in the dust, and cry "unclean," before you would attempt to extract teeth as has been done in her case, and as is being done to-day.

Dr. S. C. G. Watkins—The giving of whisky, brandy, or any of the liquors, before administering gas, I believe increases the excitement and danger. Physicians, as a rule, when patients ask their advice in regard to taking gas, will advise them to take a glass of whisky first. In such cases, where I know they have taken liquor, I always send my patient away and tell him to come back in two or three hours, and then I give the gas, but never immediately after they have taken liquor, if I know it.

Dr. C. S. Stockton—I wish to reiterate what Dr. Watkins has

said in regard to stimulants. I have seen the unfavorable effects of liquor taken before the administration of gas. I also believe with Dr. Atkinson, that it is rarely indeed that we should give an anæsthetic at all. With a little persuasion and perseverance a great many of our patients will yield, and when they do they are grateful to you afterwards that you did not give them an anæsthetic. In nine cases out of ten, where you have been compelled to inflict more or less pain, they will tell you they are glad they did not take the anæsthetic.

Sometimes we think the extraction of a pulp is about as painful a thing as we do in dentistry, and perhaps it is. In a number of instances, lately, I have been surprised to find how little pain it is necessary to inflict in order to remove a pulp. Our good friend, Dr. Pierce, once told me of a very troublesome patient of his who had a tooth in which the pulp had become exposed. He said he whittled a stick to a point and drove it into the canal with a mallet. To his great surprise the boy remained in the chair. He asked him if it did not hurt, and the boy replied that he felt it, and that was about all. I suppose that in two months' time I have removed the pulps of a dozen teeth in that way, and the patient hardly knew it had been done. I used no anæsthetic and no obtunder whatever.

Dr. Atkinson—It is very unfortunate for us that we follow fashion so much, and do not always select good fashions to follow. The description given of the knocking out of pulps is the very first method of destroying pulps that I was made acquainted with when I was a boy, when we used to set pivot teeth with wooden pivots. We whittled a stick to a point and drove it up with a mallet, then twirled it around. Many of the pulps so treated healed at the point where they were broken off. I have taken the pivots out twelve years afterwards, and found a remnant of the pulp living. This is only a new "discovery" of an old practice. If we could have had, at the time when I was a boy, societies for spreading the knowledge of what we were doing, rather than hiding it, it would have been better, and if we had more conscience and less desire to get unclean money we would not be running against each other to see who could get the "job" from the other at a less rate, and would not be extracting teeth to put in four dollar sets. It is the unclean money business that tempts men to their fall.

Dr. Osmun—In the discussion that has taken place, the impres-

sion seems to be that I am in favor of administering anæsthetics, and the extraction of teeth by wholesale. If I have given that impression, nothing was farther from my mind. I simply took up the subject as one full of interest. As gas is administered constantly, I thought it would be a good subject to talk about. I believe in the conservative treatment of teeth under all circumstances.

Dr. Stockton introduced Dr. Pritchard, of London.

Dr. Pritchard remarked, that when the millennium arrived, Dr. Atkinson's anti-anæsthetic ideas might prevail, and then he would be happy to meet him, but until then he thought it would be occasionally necessary to use an anæsthetic.

Dr. C. S. W. Baldwin read a paper on "Nasal Catarrh."

Dr. Osmun—I think that all treatment of nasal catarrh that employs warm applications is dangerous. A new instrument has been employed for treating nasal diseases. It is a compressed air cylinder, carrying from forty to fifty pounds' pressure to the square inch, and you apply the remedies cold, in the form of a fine spray. The compressed air gives sufficient force to carry the medicaments where it would be impossible to get them with steam. With the compressed air instrument a spray can be thrown at different angles and made to reach almost any part of the nasal tract. I think, however, it would be better for us to stick to the legitimate domain of dentistry. The specialist who covers our field completely has about all that he can attend to, and if he notices allied diseases it is better to send the cases to a specialist in that line, who has special appliances and special skill.

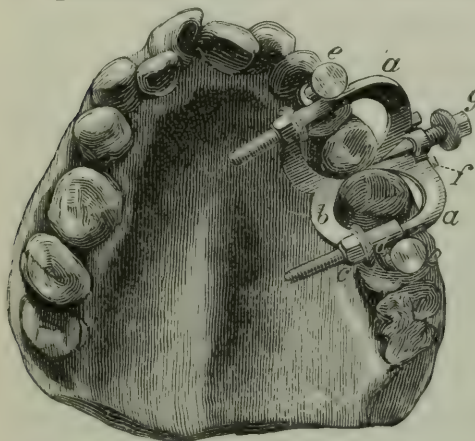
Dr. Baldwin—I am happy to hear a hearty expression of opinion, although it is in condemnation of my paper. A friend of mine, a doctor of divinity in New York, has been much troubled with nasal catarrh. He was sent to a specialist and was treated for a long time, and paid a large sum of money, and came away no better than he was before. It so happened that he came into my hands, and he was so much benefited by the treatment that he urged me to give it publicity. While theory is good, practice is better, and it has led me to the conclusions I have brought forward in the paper.

Dr. Atkinson—There is one point in which there seems to be a serious lack of apprehension of the underlying principles. There is what is called the hygrometric, or moisture-absorbing quality, in the mucous membrane of the nose. Those little epithelial bodies

that lie upon the surface of the mucous membrane are a very crotchety set of fellows. Sometimes they will be so swelled up by the imbibition of water taken into the nostrils as to completely close the nares. You have often noticed, when lying on one side, that one of the nostrils would be closed and you could breathe only through the other, and that when you turned over the one that was open would close and the other one open. This is because gravity acts upon the surcharged epithelial bodies constituting the mucous membrane. Let us know the principles that underlie these circumstances. There is some sense in applying heat in such cases. When you want to wash anything you do not use very cold water, and you put something in it. For cleansing the nostrils use soap suds; not the mottled castile soap, but the white. Wash the nostril until it is free from dry mucus, then use some kind of an agent that will destroy the microbes, and after that vaseline. Never put pure water into the nostrils, nor into any other air passage. Modify it by adding a little salt, or chloride of sodium, until it is about as saline as sea water.

Dr. Pinney—Mr. President, I wish to introduce Dr. Parr, of New York, who has a little appliance that he would like to show you. He has applied it to my teeth, and I can say that it is the most complete little machine that I ever saw. Without any pain or trouble, it separated my teeth so far apart that they could be easily filled; and it was done in five minutes, and a greater space obtained than would have been obtained in three or four days with wedges.

Dr. H. A. Parr—The separator possesses the following advantages or qualities: First, it is universal in its application. It can be



adjusted to the upper or the lower teeth, to molars, centrals or bicuspids equally well. Second, it is particularly adapted to irregular teeth. Third, it may be advantageously employed in the correction of many cases of irregularity. I will describe to you its different parts in detail, after which you can examine the instrument and the models. (See cut.) In this

diagram *a* represents an angular bar which is tapered to a point,

reaching out in a semicircular form, and has parallel sockets, *b*. *c c* are two semicircular bars, the inner ends of which are tapered to a point and meet at an acute angle, directly opposite the angle of the bar *a*. The arms of *c* are made long, and pass through the socket *b*, and have threads and nuts, *c* and *d*, which can be moved with the thumb and finger, or a wrench. Upon the convex sides of the bar *c* are lugs, *e*, to receive the movable cross-bar *f*, which is pierced by a screw, *g*, which screw has a conical end that rests between the bars *c*, and upon being turned forces the bars *c* apart, thereby effecting the desired separation. Under ordinary circumstances the turning of the nuts *d*, which may be used on either buccal or lingual surfaces, as may be desired, will be sufficient; but when more power is required, *g* should be used. *h h* are wings through which pass screws, *i*, by which the instrument may be adjusted to teeth of any length and prevent undue pressure on the gums.

Dr. Palmer—The one particular feature of Dr. Parr's separator that I like is its adaptability to any case of irregularity. In cases where the eye teeth are very prominent, or the lateral impinges on the central and canine, this separator will perform the work as well as if the teeth stood in proper position. In regulating teeth this instrument will move them in a few hours, where you might take days by other methods, and not do it as successfully.

NEW YORK ODONTOLOGICAL SOCIETY.

The regular meeting of this society for the month of May was held on the 11th ult., in the parlors of the Academy of Medicine, the President, Dr. E. A. Bogue, in the chair.

Dr. J. Morgan Howe—Read a paper from Dr. C. F. Ives, in which the attention of the society was called to a new remedial agent known as iodol, a substitute for iodoform, and which, the paper claimed, was in many respects superior to iodoform in the treatment of devitalized teeth.

Dr. H. C. Meriam, of Salem, Mass. — Exhibited some new forms of artificial crowns, and read a paper describing his method

of applying them to the roots. He also exhibited disks formed by a combination of corundum and flux carried to a high temperature. These, he stated, were very efficient in shaping the porcelain crowns to fit the roots, and the doctor gave diagrams on the blackboard to illustrate the manner in which his crowns were adjusted. He also presented a number of drills, the composition of which he was unable to give, but which much resembled the "diamond drill." These were useful for enlarging the canals of artificial crowns, and Dr. Meriam considers them far superior to anything in the market for this purpose. The paper contained some very good points of a practical nature, but was not discussed by the members.

Dr. Geo. T. Allan—Followed with the continuation of a previous paper upon "Caries of Teeth," with illustrations on the screen. The paper was discussed by Drs. Hodson, Perry, Bogue, Rich, Dwinelle, Raymond, Littig and Northrop.

The chief points of discussion were as to whether or not decalcification of the dentine would still go on in a well prepared cavity under a perfectly tight filling, from the presence of bacteria. Both the essayist and Dr. Rich were inclined to the opinion that the decay would continue, and cited Prof. Miller's views as evidence. Dr. Dwinelle and others seemed to think that, years ago, it was demonstrated that the decay could not go on in well filled cavities; also that the micro-organisms could be destroyed by the use of carbolic acid, or some other antiseptic agent.

Dr. Perry—Could not agree with the essayist in his method of anticipating caries by cutting away the proximal surfaces of teeth. This should be resorted to only in exceptional or rare instances, and then only in the front teeth. He thought the time had passed for the profession to sanction the cutting away of healthy tooth structure, and he believed that decayed teeth should in every instance be restored to their original shapes, as far as possible, by contour fillings.

Dr. Hodson—Remarked that some years ago he was induced in several instances to cut away the proximal surfaces of teeth in what he termed an "ideal" manner. His efforts, however, had been rewarded by the presence of *real cavities* in every case. He felt it to be one of the greatest sins he had ever committed during his professional career.

ILLINOIS STATE DENTAL SOCIETY.

REPORTED EXPRESSLY FOR THE INDEPENDENT PRACTITIONER.

The Illinois State Dental Society convened for its twenty-second annual meeting at Rock Island, Tuesday, May 4, 1886. The sessions were largely attended, and the meeting was one of unusual interest. After the usual preliminary business, the President, Dr. T. L. Gilmer, of Quincy, gave the annual address.

DISCUSSION.

Dr. Koch—There are only two points that I noticed in this address that I think I shall take issue with. If I understood the President correctly, he said that the rank and file of the medical profession at large was constituted of better material than the rank and file of the dental profession.

The President—I said better educated.

Dr. Koch—I was coming to that—that they were better prepared in the matter of primary education. I doubt that position. I do not know that medical colleges are any more stringent about the preliminary requirements of their students than are the dental colleges. Heretofore, I think medical students, as a class, have been made up of about as poor material as dental students, and while they may make greater pretension, there is no foundation for it. The other point to which I wish to refer, is that with reference to recognition by the medical profession. I think we ought to be proud enough of the achievements we have attained not to care very much, neither as individuals or collectively, whether they recognize us or not. I do not think any gentleman in the dental profession will ever fail, as an individual, to receive that recognition he deserves from any intelligent man, medical men inclusive. But when our President states that this recognition will come to any man who has medical education, I take issue with him. I do not think it is based upon medical knowledge, unless that medical knowledge is gained at a certain place, at the medical college; in other words, unless the possessor of that medical knowledge has in his possession a medical degree. A man who is purely

a dentist, no matter what his knowlege is, will not receive recognition by the medical profession in its associated condition, without having an M. D. to qualify him for that association. In other words, if our present President had gone to attend the American Medical Association simply with his D. D. S., the doors would not have been opened to him.

Dr. Noyes—I think the President makes a distinction which will almost completely reconcile the difference which Dr. Koch has made emphatic. What he has said I believe to be true, in respect to public recognition of us in societies. What the President meant to refer to in his paper was the personal intercourse of professional men, dentists and physicians individually. I believe the positions of both the gentlemen are correct.

The President—Dr. Noyes has expressed the sentiments of the paper exactly.

Dr. Sturgiss—I listened with some interest to the paper. The ambition that has grown old with the Dental Society of Illinios, to do something that would qualify them for professional recognition by the medical fraternity, seems to be a burden. I am willing to meet the medical fraternity on an equal basis. I am willing to be taxed with as much knowledge of medicine as they have of dentistry. More than that should not be exacted of me. I pledge you my experience that the Dental Society of Illinois to-day knows more about medicine than the Medical Society does about dentistry.

Dr. Newkirk—There was one point in the address which struck me—the suggestion as to local societies. Having had a little experience in organizing a local society in this State, I am interested in that subject. Instead of there being but one local society out of Chicago, there ought to be three or four in the State. It is a very easy thing to start one going. All you need is a few men who feel the necessity of it, and who will take hold and assist in organizing. That is what we did when we started the society in Central Illinois. We commenced with five or six members, and at our last meeting in Bloomington, last fall, we had thirty-six.

Dr. Cushing—The remarks of Dr. Newkirk suggest to me that the proper way to bring about what he desires, and what we all should desire very heartily, is to appoint from this society a committee with express reference to securing the formation of local societies throughout the State. Those of you who are familiar with

the action of the American Dental Association for the last fifteen or twenty years, are perhaps aware that such a committee was appointed from that association, and they visited various sections and aided very largely in stimulating the formation of just such societies, and that is what this society should do. I move that a committee be appointed to devise means for organizing local societies, and to report to this meeting early in its proceedings. The motion was carried.

One of the most interesting and instructive features of the meeting was the presence of Dr. G. V. Black, with his incubator and sterilizing apparatus. During the meeting he made over forty cultures of the micro-organisms of the oral cavity, and at each session he exhibited the progress made and explained the changes as illustrated by the cultures which he had made. At this point in the proceedings he made his first report.

MICRO-ORGANISMS.

Dr. Black—About all that I will do now will be to explain the apparatus for the culture of micro-organisms, as near as I can, by the apparatus which I have here.

The crust of the earth is composed of about sixty-five simple substances. Each one of these has a special affinity for other substances, and the play of these affinities gives us inorganic chemistry. The chemical forces, as such, tend to stability, and the combinations made will stand through all eternity if not disturbed. These are changed, are disturbed by light, heat, electricity, storm, wind, etc., and we still have inorganic chemistry. The other disturbing force is life, which gives us organic chemistry. In the apparatus, which I will explain, we propose to study some of the influences of life; and let me say that life is all the same, whether it is in the microbe or in the man. The man or the animal by remoleculization of food produces urea, the higher plants alkaloids, and some of those in which we are interested, lactic acid. This apparatus is for the purpose of bringing out what we can of these changes produced by micro-organisms that grow in the human mouth, that grow in the places where we work, and certainly we should familiarize ourselves with them.

This matter of the culture of micro-organisms has been looked upon by most people in the profession, and out of it, as something

far away, that could be done only by some men especially trained from their youth up, who have to be wonderfully careful and sagacious (and after all that, he is very uncertain as to what he may or may not have discovered), and that it is of no use for an ordinary man to look into it. I simply want to say that this is not the case, that there is nothing so wonderful about the matter; it is really very simple, and there are plenty of men in this society who can undertake this work and do it well, and I bring this apparatus here at this time with the hope of inducing some young men, who have the time and ability, to take hold of this subject. The work does consume an immense amount of time, and whoever undertakes it should have the ability to control his leisure.

He then exhibited to the society his apparatus for the culture of micro-organisms, and explained its construction, and also the method of sterilization and planting.

AFTERNOON SESSION.

The report on Dental Science and Literature was made by Dr. C. R. E. Koch, of Chicago.

Dr. Black—One point upon which I wish to speak is that with regard to peridental membrane. I shall speak only from my own knowledge. It seems to me there can be no question as to the character of this membrane. It is not a periosteum at all. It has not the characteristics of periosteum, except that it has a covering on one side. It is not composed as is the periosteum; does not look like it. I certainly have been able to trace fibers from the tooth to the alveolus directly, the one from the other, reaching the whole distance. It does not behave like a periosteum in inflammations, either. It is very remarkable to me that it should still be considered a periosteum by so many. The fibers are placed in a direct position in relation to the tooth and its alveolus, always in the same position, running obliquely from the one to the other, always inward from the alveolus towards the root and towards its apex, throughout the whole body of the root of the tooth, while the fibrous tissues of the periosteum is a net work. We have none of that net work in the peridental membrane. Certainly, it is faulty examination that brings about such an idea as this.

I have been struck with the general want of information in our profession as to what has been done in years gone by. We speak of

ourselves as though we had just got out of the shell—a very young profession. That is not true. We are almost as old as the medical profession. The fact is, there was not a dental profession separate and apart from the medical profession until the time of Harris. It was the action of Harris and two or three others, who were influential in his time, that brought about this separation. They lectured in medical schools, were frowned upon, and went out and made a school of their own, and we have been a distinct profession ever since.

Dr. Talbot—Do you mean to say that the peridental membrane is not connected with the periosteal membrane?

Dr. Black—I say there is no periosteal membrane there.

Dr. Talbot—How is it that when we extract a tooth we bring away the periosteal membrane?

Dr. Black—We do not. We tear the peridental membrane at about its middle. It is richly filled with blood vessels traversing it from the apex to the root, and we tear that midway. When we have an abscess the peridental membrane is not parted from the root of the tooth. The fiber is lengthened and the pus nestles among the fibers, and then when we pull out that root we pull out a great sac. In extracting the tooth we tear those fibers in two.

The doctor here illustrated upon the blackboard the position of the various parts referred to.

Dr. Cushing—Do I understand you to say that the membrane has not the function of the periosteum?

Dr. Black—I did not say that. Those fibers pass directly into the cementum.

Dr. Cushing—Does it have the function of the periosteum?

Dr. Black—It is in the osteoblasts that the function of the periosteum exists, so far as the bone-forming is concerned.

Dr. Cushing—Are not the osteoblasts a part of this membrane, as much as they are a part of the periosteum?

Dr. Black—Just as much as they are a part of the periosteum, but they are not a part of either. The difference is not in the supply of blood, which is one of the functions of the periosteum, and it is not in the fact that there are osteoblasts in both cases, but it is in the character of the tissue of which these two members are made up. As far as function is concerned, it is the same, but we do not want to confound two distinct things in this way in histology. They are

entirely distinct in character. While one simply covers the bone, the other holds the tooth in its position.

Dr. Koch—The line which the doctor draws through the center, as shown upon the board, he says is a blood-vessel. I have no doubt he knows, but I have seen that same picture drawn a little differently. The fibrous condition is represented, and then there is a line that is supposed to be a line of demarcation. On the other side the fibers are articulated, supposed to pertain to the structure of the pericementum, running entirely different, and Dr. Ingersoll stated in his paper that he called on Dr. Black, and he cites Dr. Black's slides to prove his own theory. He said he saw it in one of Dr. Black's preparations—saw the line of demarcation—and I presume that is the picture which I saw. I do not think we ought to take Dr. Black's word for it when there are other persons who believe differently, and I hope some one will examine further and either confirm or disprove it.

Dr. Talbot—I agree with Dr. Ingersoll in regard to that matter, although I have not had very much experience in making experiments. When we extract a tooth we can split that membrane in the middle, and that fibers and blood-vessels run through the center seems to me impossible. Having one style of structure on one side, the alveola process and the root of the tooth on the other, to a certain extent it is essential that we should have a varied membrane between the two structures.

Dr. Noyes—This seems to be a theoretical question entirely. It seems to me the question of tearing the membrane would depend entirely upon whether the fastenings at the ends of the ropes were stronger than the ropes themselves.

Dr. Wassall—I should like a little light from Dr. Black as to the functions of this membrane in question. The membrane has on one side cementum, and we are taught that the cementum is augmented, divided from this membrane; and on the other side of the membrane we have the alveolar wall. We are also taught that the alveolar wall is augmented and increased or absorbed by this membrane. I believe it is practically one membrane, but I should like to know how we can reconcile two functions with one membrane.

Dr. Black—I would say that this matter has been under discussion from my earliest acquaintance with histologic subjects. I

remember that Dr. Atkinson made a speech in 1867, in which he maintained stoutly that a membrane could not "functionate" two ways at one time; therefore it was a dual membrane. That is proof positive. There is misconception as to the office or function of the periosteum. Periosteum does not build bone.

Dr. Wassall—Sometimes it does.

Dr. Black—Not at all. Osteoblasts do. But osteoblasts are not periosteum.

Dr. Taylor—Are they separate and distinct?

Dr. Black—They are as separate and distinct as the muscle that is attached to the periosteum is from the periosteum.

Dr. Taylor—The osteoblasts are not, then, a part of the periosteum?

Dr. Black—They are not a part of the periosteum.

Dr. Cushing—Do you have osteoblasts without the periosteum?

Dr. Black—Certainly; we have osteoblasts all the time without periosteum. We have osteoblasts everywhere through the bone. Periosteum does not go all through.

Dr. Cushing—It does on the periphery.

Dr. Black—We have osteoblasts under the attachment of ligament where there is no periosteum, and it is these cells that have the function of bone-forming, not the periosteum stripped of these cells. It has been a great misconception. It is altogether wrong. The periosteum is not a productive membrane. It is a fascia, and has about the same office in relation to the bone that the fascia has to the muscle; not a bone-builder, if you separate it from the osteoblasts that lie on its inner surface. That is the fact about the matter.

Dr. Davis—Are not the osteoblasts nourished from the periosteum?

Dr. Black—They are nourished from the blood supply, and that blood supply does not depend particularly upon the periosteum. It is true that the periosteum does carry a large amount of blood supply in the inner half, the half next the bone, and in this way becomes a depot of supply to the bone, and you may destroy the bone by cutting off its blood supply, not because the periosteum is gone. If you could get the blood supply from some other direction it would not die.

Dr. Brophy—I believe that the pericementum is the medium

through which nourishment is transmitted from the bone, or from the nutrient vessels, for the building up of cementum, but it does not have anything to do with the nourishment of the bone which forms the socket around the tooth. I believe the bone receives its nourishment from without, and that this membrane is simply devised by nature for the purpose of supplying the teeth with the nourishment necessary for its maintenance. This view is not based upon research, but it is derived in a general way by a course of reasoning, without having studied it critically, as it has been studied by Dr. Black. I think the osteoblasts which lie beneath it are intended for the purpose of supplying the bone with nourishment, and, as he said, it can be demonstrated in various parts of the bony structure where periosteum does not exist.

Dr. Black—The tissue of the peridental membrane forms the junction between the tooth and its socket. That is its function. Within that tissue we have nerves of touch, and there we find the sense of touch. They also support blood-vessels which carry blood for the maintenance of surrounding structures.

Dr. Taylor—I would like to know whether that has any function so far as the alveolar process is concerned, or is it solely for the support and sustenance of the teeth?

Dr. Black—Simply to hold the tooth in its place.

Dr. Harlan—I want to say a word or two about dental science, which includes a consideration of the nature of the alveolar dental membrane. Dental science, as I understand it, is not limited to a consideration of works devoted strictly to dental surgery, or practice, nor even physiology. We have had during the past year a great many contributions in different countries to the practical study of bacteriology, and while we are having demonstrations here I wish to call the attention of members of the society to Kline's work on micro-organisms, and to Hueppe's Bacteriological Investigation, and to recall the attention of the society to the work of Sternberg, as I think it will be of benefit to the majority of those members who have not already read those works to get them and learn the A B C of bacteriology. I would not omit, in this connection, to refer to Cruikshank, although his is not the very latest work in that list. Those of us who may purchase or have access to nearly all the new works sometimes think, in looking over them, that there is no real advance, and so we are looking for something else.

But the body of practitioners do not, perhaps, even get the primers, and it is their duty, on account of the magnitude and importance of the germ theory of disease, that they should study works of this character, and those also of a more practical nature.

WEDNESDAY MORNING'S SESSION.

Dr. Black showed some cultures of bacteria made from infections of the day before. The first was a gelatine producing fungus very frequently found in the mouth. Others were found under a plate worn in the mouth. Dr. Black stated that some form of fungus was almost invariably found under artificial plates, and under rubber and celluloid bases the fungi were usually found in great numbers. Of these he exhibited two—*Streptococcus magnus* and *S. continuosus*. Some of them showed a very powerful acid reaction. Dr. Black stated that unless great care was taken to keep a plate clean, these fungi would be found in masses, and much of the sore mouth that was common in the wearing of artificial teeth was doubtless due to these fungi. He stated that his observations completely confirmed those of Dr. Miller, but he has ventured on giving to the different varieties names which he thought appropriate, while Dr. Miller was content to designate the varieties discovered by him through numbers. Dr. Black showed a fungus which he believed identical with the "Delta" variety of Miller.

The *Streptococci* have many species of different sizes. *S. magnus* grows under artificial plates, but was not a fungus of dental caries, as it is too large to enter the dental tubuli. It produces a very powerful acid, and is undoubtedly active in the dissolving of the teeth at the edges of partial plates, by which they are sometimes almost cut through.

A gelatine forming fungus exhibited, grows only in an alkaline medium. The solution does not, however, remain alkaline, although the gelatine formation may continue. He subsequently exhibited a culture tube nearly filled with gelatine, which was produced by the fungus living in a beef-extract-sugar solution, and which was neutralized whenever it became acid.

Dr. A. W. Harlan, of Chicago, read a paper entitled

ANTISEPTICS AND DISINFECTANTS.

Antiseptics, he said, have been used by dentists without a desire to know why they are employed, or the manner in which they act.

They have simply looked at results, and not at methods. We should comprehend the causes which render antiseptics, germicides, disinfectants and deodorizers necessary. The germ theory of disease is now accepted among pathologists, and it is responsible for the introduction of a new class of drugs.

Antiseptics and disinfectants are indicated when we wish to restrain putrefaction, or remove its results. Germicides are also needed to destroy the agents which are essential to decomposition. Antiseptic dressings are indicated in all surgical operations; as much in dental as in general surgery. The hands, instruments, syringes and every appliance, should be cleansed with an antiseptic dressing, sufficiently potent to make inert any septic matter adhering to them.

It requires judgment and knowledge to select the proper drug. When drilling for the first time into a dead tooth, one might not think it essential to use great precaution, yet if antiseptic measures are adopted there will be a saving of time which alone will repay all the care exercised. If judiciously employed, they may prevent a long treatment for periostitis. In such cases it will no longer answer to say that the patient "has caught cold." That excuse may answer for ignorant persons, but it will not do for those who are educated. It is dangerous to use a probe in the canal of a dead tooth, without first disinfecting the debris. To push a broach through the end of a root at the first sitting is almost sure to result in trouble. To cleanse a root and fill it at one sitting is reckless folly, if it be a blind abscess without a fistulous opening.

The indications for the use of antiseptics lie in engorged antrums, in septic roots of teeth, in carious and necrotic tissues, in diseased mucus membrane or gums. Wherever there is a foul smell or decomposing matter, we should at once remove and purify. Disinfectants and antiseptics are employed for quite different purposes. As it is impossible to use great heat in the mouth to destroy the infective spores, we must use something else, and hence germicides are necessary. Germs and spores are found in every part of the mouth, and throughout the whole alimentary tract. They are in the air, and ready to find a lodgment in any weakened tissue. These must be destroyed. Some antiseptics will not destroy germs without causing inflammation of living tissues; others will destroy

germs, but not spores. Some antiseptics are not disinfectants, and *vice versa*. Deodorizers may be neither of the other two, and germicides may neither disinfect nor deodorize. What we need is knowledge as to just which of these classes is required, and to what class any remedy belongs. It is my aim to use such drugs as will best perform the duty demanded, and with the least tendency to inflammation, and such as are the least obnoxious to taste or smell, or injurious to instruments.

What is an antiseptic? It is an agent which will prevent decomposition; which will arrest it when begun; which is opposed to putrefaction.

What is a disinfectant? An agent which will destroy foul odors by combining with them chemically; which will not coagulate the surface and leave the interior to putresce; which will cleanse and purify and destroy infection.

What is a germicide? An agent that will destroy germs and their spores, either directly or indirectly. Heat and cold are of course excluded, for neither can be used in the mouth.

In choosing an antiseptic the object sought for should be steadily kept in mind. If we wish to seal a cavity in a tooth containing a living pulp, we should not choose alcohol, permanganate of potassium, or a disinfecting fluid, but rather carbolic acid, aseptol, creosote, terebin, resorcin, iodol, iodoform, menthol, eugenol, eucalyptol, sanitas oil, hydronaphthol, thymol, naphthol, boro-glyceride, or some other strictly antiseptic agent. If we wish to disinfect a root, we should use Labarraque's solution of chloride of sodium, Condry's fluid, an aqueous solution of chloride of zinc, sanitas fluid No. 1, per-oxide of hydrogen, solutions of aluminum, acetate or chloride, carbon disulphide, corrosive sublimate, biniodide of mercury, hypochloride of calcium, or sodium, iodine, resorcin, boracic acid, or benzoic acid as disinfectants, for they would permeate the whole mass of putrid matter, and not coagulate the surface or substitute the odor of the drug for that which it was desired to disinfect. The object of chemical disinfection in dental surgery is to remove foul odors, destroy the agents of infection, and cleanse the parts to which the agent is applied. If a germicide be needed it is then applied. The part should now be dressed antiseptically, and all debris and foreign matter excluded.

We should not use antiseptics that are very volatile, or poisonous.

or disagreeable. Some agents are much more powerful than others, and some germs withstand antiseptics much more than others. Some antiseptics act by precipitating organic matter, and thus they starve organisms. In disinfecting it must be remembered that all infectious material is not foul-smelling, and the absence of odor is not always evidence of decomposition. Many commercial disinfectants are of little value, and some of those most loudly advertised are the most worthless.

The essayist presented various tables, showing the expense and comparative value of different preparations for disinfectant purposes, corrosive sublimate being used as the standard of comparison. He concluded that a solution of sublimate is the most powerful and economical of all the disinfecting preparations. It would require, to perfectly disinfect a room having a capacity of twelve cubic feet, no less than seventeen pounds of pure carbolic acid crystals. Hence it should never be used for this purpose, but only as an antiseptic. Nor should we select a drug because its odor overcomes and drowns the smell of putrefaction, which it has not neutralized at all. It requires a knowledge of the agents to properly select that which is best.

The discussion of the paper was by vote postponed until another session, to allow the introduction of some business matters.

Wednesday afternoon was devoted to clinics.

WEDNESDAY EVENING SESSION.

Prof. W. D. Miller, of Berlin, was elected an honorary member of the Illinois State Society by acclamation.

The committee appointed to devise means for the establishment of local societies throughout the State, recommended the appointment of a committee of seven members as a central or governing committee, whose duty it shall be to secure the formation of six subcommittees from dentists outside the Illinois State Society, to act for six districts, to be subsequently formed.

The Committee on Dental Art and Mechanism reported, through their chairman, Dr. J. Frank Marriner. A number of new and original devices were presented, some of them evidently of permanent value, together with some new methods of practice. The large number of these devices and modifications indicates great inventive genius on the part of members. • It was impossible to obtain a com-

plete list and description of them, and hence individual mention is omitted.

Dr. Black was called upon for a report upon his cultures, and said:

Before speaking particularly of the cultures I will demonstrate that the acids of the mouth are due to these fungi. The saliva when secreted is seldom acid, but it soon becomes so. I will take a drop from this culture tube containing a common fungus of the mouth, and will touch with it this piece of litmus. This is not a fungus of caries, but obtained from the dorsum of the tongue. You see that the culture fluid is intensely acid.

There are many ways of obtaining pure cultures. In such a room as this, where so many organisms are floating about, it is difficult to obtain clean cultures. The tubes become infected with strange organisms. If we have, however, two forms, say of *Streptococcus*, which we wish to separate, we may do it by their specific gravity. While one settles rapidly, the other will do so but slowly. Sometimes in this way we may get a pure culture the first day. One form grows rapidly and another slowly. Others will not separate at all, and we must employ the decimal plan. By means of a platinum wire previously heated to redness, I remove to a solution in a previously sterilized tube a single drop of any infection, and stir it up well. We may now take a drop of this fluid and transfer it to another tube containing a hundred drops of distilled water, and after shaking, examine a drop with the microscope. If the examination be not satisfactory, we may continue the dilution in another tube. Dr. Black also described gelatine culture plates, and other forms of cultures. He dilated upon the necessity for careful preliminary sterilization, and care to avoid foreign infection. When it is desired to grow any fungi, the general principles are those of gardening. A suitable soil must be procured and all weeds kept out. Then if the whole be kept at a proper temperature, the fungi will grow very rapidly. The most effective way is by culture plates, which are planted and then kept in the incubator. Dr. Black proceeded at some length to describe other methods of obtaining pure cultures, illustrating them by his apparatus, which was present. He paid a glowing tribute to Dr. W. D. Miller, whose scientific work in this direction stood for a model to the world. Others were but following where Dr. Miller led.

Dr. H. J. McKellops—Asked for information concerning different stages of decay.

Dr. Black—Said that some time ago we were all making examinations of the saliva with litmus. We found that immediately after a meal the saliva was alkaline or neutral, but in a few hours it became acid. This is because the great flow of saliva during the ingestion of a meal washes out the fungi and their products, but in a little time they again proliferate, and we find the fluids of the mouth acid. Hence the testing of the fluids of the mouth is but child's play, and teaches nothing whatever, of itself. Caries is not necessarily a continuous operation. The fungi die and another kind may succeed them.

Dr. McKellops—Often a mouth will go for years without decay, when all at once a kind of white caries will attack it with extraordinary violence.

Dr. Black—I recognize all this, and I live in the hope that in time we shall be able to control caries by systemic and topical treatment. During the year spoken of the secretions of the mouth were in a condition unfavorable to the growth of the fungi of decay. All at once, perhaps, these circumstances changed, and the fungi multiplied prodigiously. If we can control these conditions we can control decay. The fungi are very sensitive to unfavorable conditions. At one time I allowed my incubator to get cold, when every fungus died.

Dr. Templeton—Have you made cultures of fungi from the mouth before eating, to see if they be of a different character? Also, have you made special examinations of the fungi during gestation and lactation?

Dr. Black—I have not got that far yet. The question shows how great is the field yet unexamined. We know that there are different manifestations of decay at different periods, and there must be different forms of organisms, or a difference in their proliferation.

Dr. Reid—In neutralizing the fluids, do you do it by exact measure, or by trial?

Dr. Black—By trial, always. If the fluid contained always a definite amount of acid, we might use a definite amount of alkali; but this is not the case, and we must continue to carefully add the neutralizer until it is no longer acid.

(TO BE CONTINUED.)

Editorial.

TO JUNIOR DENTISTS. NO. V.

ALVEOLAR ABSCESS.

My Dear Doctor :

I am continually restricted by the poverty of our nomenclature, and yet, had I the vocabulary of the wordiest and most verbose man in existence, I do not know that I should be better off. The addition of terms and the multiplying of nominations only bring confusion to the student. There would be no end to the refinements of definition and the nice shades of distinction if once the rein be given to hair-splitting.

There are a number of different conditions, all included in the term alveolar abscess. Any pus-discharging sinus connected with the alveolus may properly be so called. It may be caused by the presence of a foreign substance, by an accidental concretion, by necrotic tissue, or by a diseased peridental membrane. It might be well to distinguish them, but it is not essential, and so I shall not attempt the invention of new names for old diseases. In what I am about to say I shall confine myself to that form of abscess caused by a septic condition of a tooth canal, which is so often the accompaniment of a devitalized pulp, and which is confined to the neighborhood of the apex of the tooth-root.

Were I to attempt to speak to you of alveolar abscess exhaustively, I must first consider the subject of inflammation, and this would involve a treatise on assimilation, circulation, innervation, and many other "ations." We must necessarily study all pathological changes as related to it, and this would involve the physiology of the system. We could not comprehend it without a thorough knowledge of the anatomy of the body, both general and minute, and the pathology would imply an acquaintance with materia medica and therapeutics. All cachectic conditions and dyscrasias have an influence on tissues, and the particular condition of any one organ may affect the other, so that it might be necessary, in any special instance, to consider the condition of the whole body, and to trace the interdependence of the several organs and tissues. This, you see, includes the whole practice of medicine, and it is a fact,

that so intimately are interwoven the functions of the different parts, a full comprehension of one involves a study of all. When, therefore, any one asserts that a knowledge of general medicine is of no special value to a dentist, ask him if he thinks that the oral tissues have no connection with the rest of the body, and are not dependent upon other organs for their condition. We will not, however, go back to consider all the nutrient currents that may influence a dental condition, but take up just the subject in hand, and examine it by itself.

An ordinary alveolar abscess is the breaking down of tissue, and the disorganization of that pabulum or food which the system supplies to injured or diseased parts. Its initial point is the apex of the root of a tooth. It is a septic condition of the territory at the extremity of a tooth-socket, and its existence implies a dead pulp. An alveolar abscess cannot exist with a live pulp, for it is inconsistent to suppose that the pulp shall be nourished and the pulp vessels retain their integrity when passing through such a devastating fire as precedes the active stage of alveolar abscess.

It also implies that there was some communication between the disturbed territory and the outside world (as in the case of a compound fracture of a bone), for without this the microbes that cause, or at least attend the condition, could not find access. I do not say that a fistula may not form except there be a dead pulp, but if it does it will not be the alveolar abscess of which I am speaking. An abscess may also form in connection with an undecayed tooth containing a dead pulp, but that, too, will not be the ordinary alveolar abscess. Usually, you will find that when a pulp has died because of some blow or injury to the tooth, and without any exposure of the pulp or socket, no abscess ensues.

The ordinary course of alveolar abscess is this: When, through decay or by accident a pulp is exposed, it dies, and putrefaction of the tissues follows. The gases of this process pass through the foramen of the tooth and carry with them septic organisms, and thus induce a violent inflammation of the pericemental membrane, which goes through the various stages until suppuration is reached, and the pus, seeking the readiest outlet, breaks through the alveolar walls and a fistula is established. There cannot be putrefaction of the pulp and the evolution of offensive gases without the presence of putrefactive organisms, so that I believe I am right when I say

that ordinary alveolar abscess cannot exist without the presence of a dead pulp and the penetration of micro-organisms. If the pulp-chamber be hermetically sealed, the pulp-tissue will dry up and desiccate. It will not produce alveolar abscess.

The septic condition, once established at the end of the root of a tooth, will usually be continued as long as the territory remains in the septic state. Nature will make attempts at a cure, but unaided, she will not usually succeed. There will be an effusion of plasmic matter about the point of disease, and an attempt to build this up into tissue, which, so long as this septic condition continues, will be abortive. A wall of plasma will surround the lesion, the outer part of which will be healthy lymph, while that nearest the diseased point will be broken down and disintegrated. It is this barrier of tissue-pabulum, thrown out by the system to repair the waste, which forms the so-called pyogenic membrane, the sac that is often extracted with an abscessed tooth.

An abscess does not, in all cases, immediately follow the death of even an exposed pulp. There are a number of reasons why this may not be the case :

1st. The point of exposure may be so wide that all the products of the putrefaction of pulp-tissue may find entrance into the mouth, and none pass through the foraminal opening.

2d. The vitality of the pericemental membrane may be so high as successfully to resist the septic organisms.

3d. The pulp-chamber and canals may become the seat of a kind of fungoid vascular growth, that precludes septic influence.

4th. The foramen may become closed, and thus prevent pericemental infection.

A tooth that has lost its pulp may exist for a long time without becoming the seat of an abscess, and this immunity may be due to either of the above causes, and yet that influence may cease eventually, when the abscess will ensue. An undecayed tooth, having a dead pulp which has given no trouble for years, immediately upon being drilled open may develop lively pericemental inflammation, which will result in an abscess. This is because an opportunity for the entrance of septic organisms has suddenly been given. Had the opening been made under aseptic conditions and no foreign matter or debris been allowed to pass the foramen, this inflammation would not have occurred. We must remember that an ordinary alveolar

abscess implies a septic condition, and the presence of septic organisms.

You will remember that in my last letter I spoke to you of the importance of a clear conception of what the terms septic and aseptic mean. I suppose that you thoroughly comprehend the whole theory of septic influences now, and have made a study, more or less complete, of bacteriology. If you have not, young man, you will soon be left far behind in your professional race. It is impossible for you to comprehend the modern theories of disease and cure without this knowledge. The surgeon, general or special, who has not studied the Listerian theory, and learned something of the proper aseptic treatment of wounds and lesions, should retire to the woods, for he is entirely unfit to practice any branch of the healing art.

If you have this indispensable knowledge, I need spend but a few moments in speaking of the treatment of common alveolar abscess. It is essentially antiseptic. If a fistula shall have been established through the alveolar walls, the whole theory is very simple, and a few plain directions are sufficient. You must first get unobstructed access to the nerve canal or canals, as mentioned in my last letter to you. Then clean the canals and pulp chamber carefully, and see if the foramen at the end of the root is open. All this should be done carefully, and without the thrusting of any of the offensive debris through the root. Now, after adjusting the rubber dam, force into the tooth and through the whole fistulous tract some reliable antiseptic. For a long time my almost exclusive remedy for this was pure carbolic acid. This is not only an antiseptic, but a cauterant as well, and it will burn out the diseased territory and form the initial point for a new growth of tissue. One thorough application is usually sufficient. If you use this remedy, the rubber dam is essential to prevent excoriation of the lips and gums. Wind a few filaments of cotton upon a very delicate broach, and use this as a piston to pump the remedy in until it appears freely at the fistulous opening. This is usually sufficient, and the canal may be at once filled, though I usually postpone the filling for a week, that I may make assurance doubly sure. This means of treatment is very effective, and is usually attended by no pain.

Of late years, when I am sure that I have the fistulous tract open, I more frequently fill a syringe with peroxide of hydrogen, in-

sert the point into the cavity and pack closely around it with cotton dipped in sandarac, and then force a stream quite through. This is continued as long as there is any sign of effervescence, after which the nerve canals are filled.

If there be no fistulous opening at the gums, but the abscess is discharging through the tooth, the treatment is the same in principle, but it will be more tedious. The nerve canals and the pulp-chamber, after being thoroughly cleansed, must be filled with cotton saturated with the antiseptic, which latter must be forced through the foramen if possible. The treatment must be continued and the cotton changed as often as it loses its antiseptic power, and this you may determine by the smell. For this reason an antiseptic having a distinct odor should be used, and before it loses its peculiar fragrance and becomes offensive it must be changed, even though this implies hourly treatment. All depends upon keeping the cotton aseptic. When this condition is permanently secured the root may be filled.

THE AMERICAN DENTAL ASSOCIATION.

The time for the meeting of the representative dental society of America approaches. Now that all the differences over the selection of a place of meeting are so happily settled, every dentist who has the good of his profession at heart should set himself seriously to work to see in what way he can best aid in the advancement of his calling. If we are to be ranked as a scientific body, we must do scientific work. The real success of the Niagara meeting is to be measured by the technical value of the papers read, and the general tone of the discussions, and not wholly by the numbers in attendance, or the social entertainments offered. The contemplation of elementary subjects should be left to subordinate and local societies. The men who attend the A. D. A. ought not to bring to the meeting crude and undigested thought, nor present rudimentary subjects for consideration. We pray that the members may be spared the long-winded, circumstantial, personal narratives of practice that are too often inflicted upon the listeners at such times. Let every member come prepared with matters of interest, and not trust to the inspiration of the moment for a theme, nor get up and work the pump-handle when the well is too perceptibly dry.

KANSAS AND ILLINOIS.

There may be a few opinionated eastern dentists who believe that their brethren of the west are as much behind them in professional attainments as they are upon the dial of the clock; that he of the western frontier still uses the turnkey for extraction, and is unacquainted with the dental engine and the electric mallet. If such ignorant ones there be, we can only wish that for their own edification they had been present at the late meeting of the Kansas State Dental Society. A more earnest and intelligent body of professional workers it has not been our good fortune to meet. Men who are so ardent in study and investigation that, after ten o'clock of the third session of the day, they will listen for more than an hour to a technical address, and not a single one of them betray a sign of weariness, are not found in every dental society.

The Kansas State Dental Society meeting for 1886, held at Topeka, the State capital, was a grand success. Not only was the attendance large, but the papers read were good, and the discussions fervent and intelligent. The clinics were a marked feature, and some of them were unique. It was the first time that we ever saw the whole process of making a full gold plate, from the refining of the gold to the final finishing, demonstrated before a dental society. Yet this was done at the Kansas State meeting, by Dr. Howe, of Lawrence, and the editor of this journal has the plate so made, to exhibit as a specimen of western dentistry. Great credit for the result of the meeting is due to the enthusiastic, generous souls who so freely spent their time and money to make of the meeting a success. From the distinguished President, Hon. L. C. Wasson, of Ottawa, down to the latest admitted member, all put forth every effort to add to the interest of the occasion. An excellent State dental law aids materially in elevating the professional status of the State. All hail, Kansas! Though one of the youngest in our legislative family of States, she is growing professionally with a rapidity characteristic of her wondrous soil.

The Illinois State meeting, held at Rock Island the week succeeding the Kansas meeting, was a very profitable one. In none of the States is there a State society whose transactions are read with more interest than in Illinois. In no State or local society meeting that we have ever attended was there such a grappling for basal principles as in Illinois. Long-winded "incidents of practice"

stories, in which the whole pedigree of the patient is related with minutest exactness, are not tolerated in this society.

A remarkable exhibition, and one that, we think, is entirely without precedent in society meetings, was that of Prof. G. V. Black, who had his incubator and sterilizing apparatus with him, and who made daily exhibitions of cultures of micro-organisms and demonstrated the changes wrought by them. In depth of research and breadth of the scope of true scientific investigation, the Illinois State society is not surpassed by any organization in this country. We can only refer our readers to the report of the meeting in this journal, and assure them that they will find plenty of food for thought therein.

POST-GRADUATE STUDY.

Thoughtful men in dentistry are beginning to consider the possibility of a higher professional education than that offered by either the average medical or dental school. They realize the fact that if we are to diligently cultivate that particular portion of the field of science which we claim as our rightful heritage, if we are to take rank as scientific men and to obtain recognition from the purely scientific world, we need more perfect methods and to rise to a yet higher plane. The general information obtained in our schools is not sufficient. We must make advancement in abstract science as pertaining to our specialty, and not spend our whole time in applied study. Our schools are, from year to year, raising their standard of graduation, and perhaps advance as fast as they are warranted in doing by the average state of professional opinion. But they do not go far enough for the real students, who are demanding something more, and who crave a yet deeper erudition than that which is indexed by the D. D. S. or the M. D.

There are many men whose early opportunities were restricted by their environments, who entered the profession of dentistry by the back door, and who are to-day without the distinctive degree which indicates scholastic training. Some of these men will be content with cheap diplomas, issued by too accommodating cheap schools, and obtained by only nominal labor. There are others whose aim is not the possession of a diploma, but the acquisition of real knowledge. They realize the fact that a diploma is not a perfect index of the amount of information obtained, and sigh for something further. Others, having graduated regularly, desire to continue a systematic

course of study, and to keep up with the advance of scientific knowledge. There are many allied branches of medical or dental learning which they wish to study.

What shall be done for these men? They are engaged in practice, have families dependent upon them, have many ties which bind them to home, and hence it is impossible for them to attend any of the higher schools, or to go abroad for study. Is it not practicable to establish a grade of study to be pursued at home, to mark out a systematic course to be pursued under competent instructors, the tuition to be obtained through correspondence or by the publication of courses of lectures on definite themes, somewhat after the manner of the Chautauqua Literary Course, but modified to suit the exigencies demanded?

At the late meeting of the Illinois State Dental Society, a very thoughtful paper bearing upon this subject was presented by Dr. J. D. Moody, of Mendota, and it elicited the hearty approval of the intelligent body of men before whom it was read. This journal will give an abstract of that paper in due time, and hopes for something further upon the subject from its competent author. It is a theme worthy the earnest consideration of any man, and we commend it to the thoughtful reader, and shall be glad to receive communications concerning it. Be assured it is a want that must soon be provided for. Dentistry is a young and pushing science, and it will not long be content with the present grade of scholastic requirements. It is to be hoped that the subject will be presented before the coming meeting of the American Dental Association, that an expression of the views of some of our best men may be obtained.

TO NEW SUBSCRIBERS.

All new subscriptions for Vol. VII. received after this, must commence with the July number. A sufficient number of extra copies was printed, it was thought, to supply all the new subscribers who would wish to commence with the beginning of the volume. Yet every one has been used, and a considerable number of subscriptions sent in, with a request for back numbers, have been necessarily entered as beginning with the July number. The demand has been much greater than our anticipations. If any one has January and February numbers which he does not desire to keep, and will send them to the Buffalo office, it will enable us to supply some who earnestly desire to commence with the volume.

BIBLIOGRAPHICAL.

THE DIAGRAM APPOINTMENT BOOK AND POCKET DIARY FOR DENTISTS. Philadelphia: Welch Dental Co., 1886.

This is one of the best forms of pocket appointment books that we have seen. There is a diagram of both the upper and lower teeth at the head of the space set apart for each day, and this may be used as a record for each filling inserted. There are three days upon each page, and thus the work for a whole week is before the eyes whenever the book is opened. It is adapted to any year. Price, with flexible leather cover, 75 cents.

THE ARCHIVES OF GYNÆCOLOGY, OBSTETRICS AND PEDIATRICS. New York City: Leonard & Co., 141 Broadway.

This is a new bi-monthly journal, especially devoted to diseases of women and children. The first number, which is before us, is a handsome one, and its one hundred and four pages are full of matter of the greatest interest to every physician. It is printed in type considerably smaller than that in which this article is set, and only "side-heads" are employed, so that every inch of space is utilized. It is, in fact, a complete compendium of gynæcological science. \$3.00 per annum.

PRACTICAL NOTES ON THE TREATMENT OF SKIN DISEASES. II ECZEMA. By GEO. H. ROHE, M. D.

We have previously called attention to these exceedingly useful monographs by Dr. Rohé. The second number fully sustains the reputation gained by the first.

TRANSACTIONS OF THE ILLINOIS STATE DENTAL SOCIETY FOR 1885.

This is another of the very handsome volumes published by the S. S. White Dental Manufacturing Co. The Illinois Society is known as one of the very best (possibly we might say a little more) of all the State societies in existence. There is an earnestness and zeal exhibited by its members that might well be imitated in other States. At the meeting for 1885, ten papers and addresses were presented, some of which are of great value. The arrangement of the matter is very judicious, the report of the discussions immediately following the papers, and thus all that was said upon any subject may be found in one place and without searching through the whole

book for it. The volume is a worthy successor to those which have preceded it.

PAPERS ON A SYSTEM OF REGULATING TEETH, BY INTERMITTENT PRESSURE, BASED UPON A PHYSIOLOGICAL LAW. By J. N. FARRAR, M. D., D. D. S., New York City.

Dr. Farrar has presented the most complete system for regulating teeth that has been given the profession. He has been frequently misunderstood, and his system condemned by those who did not comprehend it. We should be glad to give extracts from this series of papers in explanation of his views, but the lack of space forbids. We can only advise all dentists to make a careful study of his positive system, and can assure them that they will be much the wiser for it.

A New Departure in Uterine Therapeutics. The Dry Treatment. By GEO. J. ENGLEMANN, M. D. Reprint from the *St. Louis Courier of Medicine*.

Insidious Septicæmia. A rare, deceptive and fatal form of the disease. By GEO. J. ENGLEMANN, M. D. Reprint from Vol. IX. *Gynæcological Transactions*.

Progress of Electrolysis in Surgery. By ROBERT NEWMAN, M. D. Reprint from *Gaillard's Medical Journal*.

What is Medicine? Annual Address before the American Academy of Medicine. By ALBERT L. GIHON, A. M., M. D.

Third Annual Report of the Iowa Board of Dental Examiners.

Cocaine in Hay Fever. A lecture delivered at the Chicago Medical College. Reprint from the *Journal of the American Medical Association*. By SETH S. BISHOP, M. D.

Note-Book for cases of Ovarian and Abdominal Tumors. By JOHN HOMANS, M. D.

Presidential Address before the Louisiana State Dental Society. By GEO. J. FRIEDRICH, M. D., D. D. S.

On the Necessity for the Organization of the Medical Profession. By F. E. DANIEL, M. D. Reprint from the *Medical Bulletin*.

Current News and Opinion.

NUTRITION FOR INFANTS AND INVALIDS.

In the study of infantile nutrition the chief question is the fitness in quality and composition of the food for the purpose intended.

Human milk is the typical food for the race. We find on examination that it is composed of several alimentary principles :

First.—A nitrogenous substance (casein) and small quantities of other forms of albuminous matter.

Second.—Fatty matter (butter).

Third.—A carbo-hydrate (lactose or milk sugar).

Fourth.—Salts and inorganic matter.

It is especially necessary in a food designed for infants and invalids that the nearest possible approach to the above standard be realized. Cow's milk varies so much from this standard that it is necessary to combine with it other substances that will supply its deficiencies. The most notable differences are in the greater amount of milk sugar and the smaller amount of casein which human milk contains.

For many years the best medical authorities have recommended the use of milk sugar in food for infants, and with the happiest results. It is recommended because, as Prof. Kuss says in his *Physiology* (p. 301), "the principal element in woman's milk is the sugar of milk." Not only does it give a pleasant taste, but it has been found by Dr. Ruschenberger to have an excellent effect, even in extreme irritability of the stomach. Dr. C. H. Routh, in his work, "Infant Feeding and its Influence on Life," says : "Sugar of milk allays morbid irritation, and will often check diarrhoea." It will thus be seen to be not only highly nutritious, but at the same time has medical properties that will prove of great value for the large class of infants that are predisposed to irritability of the stomach and bowels.

Cane sugar, which is so universally used to sweeten food for infants, and often in excessive amounts, on the contrary has a great tendency to produce at once fermentation in the stomach, and break up into carbonic acid and alcohol, and thus augment instead of allay the irritation. It often produces gastric catarrh and diarrhoea, and oftentimes results in constipation, with irritation of the mucous membrane, as is often indicated by sore mouth, etc.

The fermentation resulting from milk sugar (which takes place very slowly) is the lactic fermentation, producing lactic acid—the true acid of digestion.

Food, to be capable of supporting life, must contain three kinds of substances in due proportion :—

1. Plastic or nitrogenous matter, to nourish the fleshy or muscular parts of the body.

2. Calorifiant or combustible matter, i. e., carbo-hydrates, to supply the respiratory organs, to preserve animal heat, and provide fat for the body.

3. Mineral matters or salts, for the growth of the bones and to hold in chemical union, combination, and action the solids and liquids of the body.—*Extract.*

UNIVERSITIES OF EUROPE.

The following is a list of the Universities of Europe, as compiled by a prominent dentist in Germany, and transmitted for publication in the *INDEPENDENT PRACTITIONER*, by Dr. Louis Ottofy, of Chicago.

AUSTRO-HUNGARY: Agram, Budapest, Czernowitz, Graz, Innsbruck, Klausenburg, Cracow, Lemberg, Prague, Vienna.

BELGIUM: Brussels, Gand, Louvain, Liège.

DENMARK: Copenhagen.

FRANCE: Angers, Lille, Lyons, Paris, Poitiers, Toulouse.

GERMANY: Berlin, Bonn, Breslau, Erlangen, Freiburg, Giessen, Göttingen, Greifswald, Halle, Heidelberg, Jena, Kiel, Königsberg, Leipzig, Marburg, Muenchen, Rostock, Strassburg, Tuebingen, Wuerzburg.

GREAT BRITAIN: Aberdeen, Cambridge, Dublin, Durham, Edinburgh, Glasgow, London, Oxford, St. Andrews.

ITALY: Bologna, Cagliari, Catania, Genoa, Macerata, Messina, Modena, Naples, Padua, Palermo, Parma, Pavia, Pisa, Rome, Sassari, Siena, Turin.

NETHERLANDS: Groningen, Leiden, Utrecht.

NORWAY: Christiania.

PORTUGAL: Coimbra.

RUSSIA: Charkow, Dorpat, Helsingfors, Kiev, Odessa, Petersburg, Warsaw, Vilna.

SPAIN: Barcelona, Granada, Madrid, Oviedo, Salamanca, Santiago, Saragossa, Seville, Valencia, Valladolid.

SWEDEN: Lund, Upsala.

SWITZERLAND: Basle, Berne, Geneva, Zurich.

THE AMERICAN DENTAL ASSOCIATION.

The votes of nearly all the members have been received. A majority of the votes cast are in favor of Chicago over all other places, and a very large majority pledge their attendance if the meeting shall be held in Chicago. But in deference to the minority, and for the sake of harmonizing all differences, as chairman of the Executive Committee of arrangements, I hereby, with the consent of my colleagues, announce the next place of meeting to be at Niagara Falls, August 3.

State and Local Dental Societies should remember that every local society which has adopted substantially the code of ethics of the American Medical Association is entitled to one delegate for every five members. Appoint your delegates soon, and let all unite in making this the largest and most profitable meeting of the Association yet held.

Information concerning hotel and railroad rates will be given later.

J. N. CROUSE, 2101 Michigan Ave.,

Chairman of Ex. Com.

NATIONAL DENTAL ASSOCIATION.

The next regular biennial meeting of the National Dental Association of the United States of America will be held at Washington, D. C., July 27, 28 and 29, 1886.

OFFICERS.

President—R. B. Winder, Baltimore, Md.

First Vice-President—John B. Rich, New York.

Second Vice-President—V. E. Turner, Raleigh, N. C.

Third Vice-President—W. W. Ford, Macon, Ga.

Fourth Vice-President—E. Parmly Brown, Flushing, N. Y.

Fifth Vice-President—J. H. Coyle, Thomasville, Ga.

Secretary—R. Finley Hunt, Washington, D. C.

Treasurer—H. B. Noble, Washington, D. C.

Very respectfully,

R. FINLEY HUNT,

Sec. N. D. A. U. S. A.

THE AMERICAN MEDICAL ASSOCIATION.

The thirty-seventh annual session of the American Medical Association held in St. Louis, was a large and harmonious meeting. As was anticipated, no change in the organization of the International Congress was made, and the matter stands as it did before the meeting. Dr. N. H. Davis, of Chicago, was elected President of the Congress, in place of Dr. Austin Flint, deceased. Dr. E. H. Gregory, of St. Louis, was elected President of the Association, the next meeting of which will be held in Chicago. Of the Section of Oral and Dental Surgery, Dr. J. S. Marshall, of Chicago, was elected Chairman, and Dr. E. S. Talbot, of Chicago, Secretary.

A SPECIMEN OF COMPARATIVE DENTAL PATHOLOGY.

Among the playthings of a little child was found what seems to be the tooth of a cat. Nothing is known of the history of this tooth, but it bears strong evidence of having been a troublesome member. Upon one root, as will be seen in the cut, the entire surface appears to be roughened by exostosis from the apex almost to the cervix. Or are these the marks of the mysterious pyorrhœa alveolaris? The other root is atrophied to a marked extent. Poor pussy, she had her dental troubles as well as we, whatever may have been the exact symptoms of her case.



Have we here a possible cause for some of those nocturnal complaints that we hear at times with so much regret?

HENRY N. DODGE, M. D., D. D. S.,

Morristown, N. J.

MARRIED.

On the 24th of April, at the Church of the Holy Communion (Episcopal), New York City, Dr. Lawrence Vanderpant, of Orange, New Jersey, to Margaret Ellis, formerly of London, England.

A MODIFIED MATRIX.

It is sometimes extremely difficult to satisfactorily fill cavities upon the posterior surface of second molars, when the third molar is only partially erupted.



Dr. J. A. Swasey, of Chicago, meeting with such a case, took an ordinary Jack's matrix and placed a button of soft solder upon its posterior surface. This was shaped with a file, and a groove made around it, as is represented in the accompanying cut. A hole is cut in the rubber dam, and it is adjusted in the groove. Holes are cut for the second and first molars, and the matrix firmly placed between the second and third molars. The rubber dam is thus easily adjusted and held in place, there being no necessity for its enveloping the third molar. It is a very ingenious and effective device, and one easily made by any dentist.

DR. HERBST COMING.

Dr. W. Herbst, the originator of the Herbst system of filling teeth by rotary motion, will arrive in New York on or about June 25th. He will give clinics before the First District Dental Society at White's Dental Depot, Broadway and Ninth St., in the afternoon, and at the New York College of Dentistry in the morning, during the first week in July. Members of the dental profession are invited to attend and satisfy themselves concerning the merits of the rotary system.

ODONTOGRAPHIC SOCIETY.

The Odontographic Society of Philadelphia, at the twenty-third annual meeting, re-elected Drs. Jos. R. C. Ward, President; C. A. Kingsbury, 1st Vice-President; Chas. E. Pike, 2d Vice President; Jno. W. Wunderlich, Treasurer; Chas. E. Graves, Rec. Secretary; Alonzo Boice, Cor. Secretary; S. J. Dickey, Curator; C. J. McCartney, Librarian; Thos. C. Stellwagen, L. Ashley Faught, and Wm. A. Green, Ex. Committee.

CHAS. E. GRAVES, D. D. S., Rec. Secretary.

FIFTH DISTRICT DENTAL SOCIETY.

The eighteenth annual meeting of the Fifth District Dental Society of the State of New York, was held at Stanwix Hall, Rome, N. Y., Tuesday and Wednesday, April 13 and 14, 1886. Five new members were received. The officers elected for the ensuing year are as follows:

President—G. L. Curtis, Syracuse.

Vice-President—C. H. Bennett, Waterville.

Recording Secretary—C. J. Peters, Syracuse.

Correspondent—B. T. Mason, Phoenix.

Treasurer—A. R. Cooke, Syracuse.

Librarian—A. Retter, Utica.

MINNESOTA STATE BOARD.

A regular meeting of the Minnesota State Board of Dental Examiners will be held Saturday, July 25th, 1886, at St. Paul (immediately after the Minnesota State Dental Society), for the purpose of examining applicants to practice in the State of Minnesota.

J. H. MARTINDALE, Sec'y.

SPONGE-GRAFTING—WHAT BECOMES OF THE SPONGE?—Dr. John C. Cotton, of Meadville, Pennsylvania, asks this question. By some it is claimed that the sponge, after forming a temporary trellis or support for the new granulations, when they are able to support themselves, becomes digested and absorbed. By others it is maintained that the sponge itself becomes organized and forms a constituent of the new growth. Still others contend that the sponge simply affords a proper covering for the new granulations, and by its presence stimulates their growth, and when this is accomplished, it is thrown off as effete matter. Dr. Cotton lays down the following deductions: 1. The sponge is not organized, but simply forms a support for the new granulations, which shoot up and interlock or coalesce through its meshes, until they become sufficiently strong not to require an artificial prop, when it is digested. 2. The Sponge sometimes does rise in the wound, but in such cases it is the result of accident, such as want of sustained equable compression, etc. When perfectly successful it should adhere to the base of the cavity, and be completely enveloped in the new structure. 3. Epithelial cells are not always derived directly from an epithelial margin, but may be transmitted through a medium, probably pus.—*Provincial Med. Jour.*

PROFESSOR HUXLEY, in a certain debate on smoking among the members of the British Association, told the story of his struggles in a way which utterly put the anti tobacconists to confusion. "For forty years of my life," said he, "tobacco had been a deadly poison to me. [Loud cheers from the anti-tobacconists.] In my youth, as a medical student, I tried to smoke. In vain! At every fresh attempt my insidious foe stretched me prostrate on the floor. [Repeated cheers.] I entered the navy. Again I tried to smoke, and again met with defeat. I hated tobacco. I could have almost lent my support to any institution that had for its object the putting of tobacco smokers to death. [Vociferous cheering.] A few years ago I was in Brittany with some friends; we went to an inn; they began to smoke and look very happy, and outside it was very wet and dismal. I thought I would try a cigar. [Murmurs.] I did so. [Great expectations.] I smoked that cigar—it was delicious! [Groans.] From that moment I was a changed man, and now I feel that smoking in moderation is a comfortable and laudable practice, and is productive of good. [Dismay and confusion of the anti-tobacconists. Roars of laughter from the smokers.] There is no more harm in a pipe than there is in a cup of tea. You may poison yourself by drinking too much green tea, and kill yourself by eating too many beefsteaks. For my own part, I consider that tobacco, in moderation, is a sweetener and equalizer of the temper." [Total rout of the anti-tobacconists, and complete triumph of the smokers.]—*Medical and Surgical Reporter.*

THE SUCCESSIVE ANNUAL REPORTS of the Iowa State Board of Dental Examiners, forwarded by the Secretary, Dr. W. P. Dickinson, show a steady growth in the organization of the profession in that State. After all, it is the moral support of the people, which is gained by complete organization, that is the greatest benefit derived from legislation. There are few men who alone are competent to conquer the respect of all the world, but a thorough organization of even the weakest will bear down all before it.

The reports also show the benefits of legislation in another way. When the Iowa State dental law was passed, there were but twenty-three dental graduates in the State. Now there are about one hundred.

THE SOUTHERN CALIFORNIA PRACTITIONER is a very bright and readable journal. It shows excellent judgment, too—far above that of the average medical man—when it gives a list of the members of the Southern California Odontological Society and then says:

“The members of the medical profession are often asked: ‘Who is the best dentist,’ and we recommend them to refer to the above list, because it contains the names of bright, energetic, professional dentists. Quacks, in all professions, shun scientific societies.”

A COMMITTEE OF FIVE MEMBERS was appointed at the late meeting of the Illinois State Dental Society to take into consideration and to report, if possible, some feasible means to enable Dr. G. V. Black to devote his whole attention to histological and pathological research. Such work cannot be perfectly done when one is obliged at the same time to conduct a private practice. The general idea seemed to be that, to carry on successful original scientific observations, the observer must be enabled to give to it his whole time. The object of the movement is a noble one.

DR. J. S. WALTER, of Rochester, who has for many years been engaged in the practice of dentistry in Western New York, has gone—

“Where rolls the Oregon, and hears no sound
Save his own dashings.”

His removal leaves but one of the brothers Walter in practice in this State. Dr. Walter’s new address will be Ashland, Oregon.

A MAN whose opinions are not attacked is beneath contempt. Every real thought on every real subject knocks the wind out of somebody or other.

I find the great thing in this world is not so much where we stand, as in what direction we are moving.

Controversy equalizes fools and wise men in the same way—and the fools know it.—*Oliver Wendell Holmes.*

THE AMERICAN SOCIETY FOR THE ADVANCEMENT OF SCIENCE meets in Buffalo, in August of this year. This society has, ever since its organization, held its every tenth meeting in the Queen City of the Lakes, and this is the decennial year.

THE ADVENT OF COCAINE as an anæsthetic was heralded with the utmost degree of enthusiasm, and its marvelous effects as a pain obtunder were pictured in glowing colors. Now, however, it is to be observed that the enthusiasm has spent its force, and to the enthusiast the picture has lost much of its brilliancy. Imagination has played a prominent part in both directions, and *imagination* wields powerful influences for good or evil among mankind.

A LADY, with her head bandaged, rushed into her dentist's office and exclaimed: "Doctor, I cannot stand it any longer. These artificial teeth you made for me cause the most terrible agony."

"Well, Madam," was the answer, "what would you have? I could not imitate nature any better."

A BOX CONTAINING several pieces of prehistoric Etruscan dentistry was exhibited at the Kansas and Illinois State Dental Societies. The specimens were secured by Dr. J. G. Van Marter, of Rome, Italy, from lately discovered Etrurian graves, and were forwarded by him to the INDEPENDENT PRACTITIONER. They are the earliest pieces of dental work extant.

AT THE LATE MEETING of the Kansas State Dental Society, R. I. Pearson & Co., of Kansas City, made a remarkable show of Dental materials. Their line of the S. S. White Manufacturing Co.'s goods must have been well nigh complete. Certainly, it would have done credit to that company, had it been their own display.

JAMES VICK, of Rochester, N. Y., may well claim to be the monarch of the floral world. It is doubtful if there exists any other man who is so extensive a dealer in seeds and shrubs. If any one wants a floral variety, let him send to Mr. Vick, with the certainty that he will receive only seeds that are fresh

THE WEEKLY MEDICAL REVIEW, of St. Louis, published a daily bulletin containing the proceedings of the American Medical Association. It was an instance of decided enterprise. We beg to acknowledge the courtesy of the publishers in sending us copies.

DR. THOMAS W. EVANS, of Paris, has been honored by the king of Sweden with the decoration of the "Order of the Polar Star," for a successful operation of oral surgery. So reports the *London World*.

DR. W. STORER HOW is sending out blank forms for recording the exact symptoms and conditions attending all diseased conditions of the mouth. They are to be used for the benefit of the section of Etiology and Physiology, in the American Dental Association.

THE THIRD ANNUAL MEETING of the National Association of Dental Faculties will be held at Niagara Falls, Wednesday, August 4th, at 3 P. M.

H. A. SMITH, Secretary.

C. N. PEIRCE, President.

H. BOYLE RUNNELS, in the *Bristol Medico-Chirurgical Journal*, says it is his experience that *every* case of so-called neuralgia, not due to a nerve implicated by a growth, carious bone, or a scar, is the result of dental irritation. Dr. J. M. Ackland, in the same journal, would add general debility as sometimes a cause, and ascribe all the rest to dental troubles.

THE ST. LOUIS WEEKLY REVIEW, during the meeting of the American Medical Association, gave a reception and dinner to the editors of the medical profession. The evening so spent was said to have been a very enjoyable one, and the courtesy and hospitality of the *Review* was highly appreciated. The editor of this journal returns his appreciative thanks for an invitation to be present.

THE SOUTHERN DENTAL ASSOCIATION will meet at Nashville July 27, 1886, and will continue four days. Preparations are being made for a large meeting, and from the intelligence so far received it is believed that it will be one of unusual interest. Members of the profession from every locality are cordially invited to be present.

DR. G. V. BLACK dissents most emphatically from the time-honored teachings of dental anatomy concerning the function and structure of the peridental membrane. His views are set forth in the report of the Illinois State Dental Society, in this number.

A DEATH CERTIFICATE returned to the proper authorities by a Cincinnati physician gives the cause of death as follows: "She died with Liver dease & New Monei."

IMPORTANT FROM HOT SPRINGS.—A friend of ours went to the Springs for change and rest. The waiters got his change and the hotels the rest.—*Weekly Medical Review*.

AT THE MEETING of the Illinois State Dental Society, Mr. C. Geo. Crowley, of New York, was elected an honorary member in recognition of his able literary work done for the profession.

THE S. S. W. D. M. Co. put up red and blue litmus cut in small squares and contained in bottles. They are very convenient for testing for acids and alkalis.

DR. W. D. MILLER was elected an honorary member of the Illinois State Dental Association by acclamation, and with great acclaim.

THE MINNESOTA HOSPITAL MEDICAL COLLEGE has established a Spring course adapted to the instruction of dental students.

DR. B. MERRILL HOPKINSON has again resigned his position as assistant demonstrator in the University of Maryland, Dental Department.

DR. CARVER, THE MARKSMAN-DENTIST, prefers plugging glass balls with lead to plugging teeth with gold.

"PREVENTIVE MEDICINE."

PROPHYLACTIC, ANTISEPTIC, DISINFECTANT.
LISTERINE
NON-TOXIC, NON-IRRITANT, NON-ESCHAROTIC.

These properties added to the absolute safety of Listerine, its agreeable character and uniform strength, concentrates into this preparation every requisite of a perfect Prophylactic, and gives it undoubted superiority over all other Antiseptics, especially for internal use. The well-known therapy of the several ingredients of Listerine confirms its claims for more than merely mechanical germicidal properties.

Formula.—LISTERINE is the *essential Antiseptic* constituent of Thyme, Eucalyptus, Baptisia Gaultheria and Mentha Arvensis in combination. Each *fluid drachm* also contains *two grains of refined and purified Benzo-Boracic Acid*.

Dose.—One teaspoonful *three or more* times a day (as indicated). As a local application to ulcers, wounds and abscesses, or as a gargle, mouth-wash, inhalant or injection, it can be used *ad libitum*, diluted as desired.

The universal commendation of LISTERINE by Physicians and Scientists of all Schools throughout the United States, after five years' thorough Clinical Experience, has fully established its value in PHTHISIS, DYSPEPSIA, DIPHTHERIA, CATARRH, DYSENTERY, SCARLATINA, SMALL-POX, ERYSIPELAS, TYPHOID and other FEVERS; and as the most grateful and pleasant disinfectant and prophylactic for VAGINAL INJECTIONS* in OBSTETRICS, LEUCORRŒA, GONORRŒA, and, notably, for the hands, after Surgical and Gynæcological Operations.

This accumulated evidence of merit indicates its special adaptability to

DENTAL PRACTICE.

The testimony of its value in the treatment of ORAL DISEASES, in Dental Practice, is set forth in a special pamphlet on that subject to be obtained gratis on application, together with many Valuable Clinical Notes and Reprints by Eminent Surgical, Medical and Dental Authors.

Three Reprinted Lectures on CHRONIC NASAL CATARRH, (illustrated by forty wood cuts,) by Prof. GEORGE M. LEFFERTS, M. D., New York City, are now ready for delivery, free of cost, to those who mention this Journal in making application.

LAMBERT PHARMACAL Co.,

New Office and Laboratory. - 116 Olive Street, ST. LOUIS.

TO MACKINAC.

SUMMER TOURS. PALACE STEAMERS. LOW RATES.

Four trips per week between Detroit, Mackinac Island, St. Ignace, Cheboygan, Alpena, Harrisville, Oscoda, Sand Beach, Port Huron, St. Clair, Oakland House, Marine City. Every week day between Detroit and Cleveland. Special Sunday trips during July and August.

Our Illustrated Pamphlets, Rates and Excursion Tickets will be furnished by your Ticket Agent, or address

C. D. WHITCOMB, Gen'l Pass. Agent,
DETROIT & CLEVELAND STEAM NAVIGATION CO.
DETROIT, MICHIGAN.

WANTED.

A situation as Mechanical Assistant. Age, 26 years. Ten years' experience. Address

"MECHANICS,"

Care of the Editor of the INDEPENDENT PRACTITIONER, Buffalo, N. Y.

WANTED!—*Your address, to introduce an important subject, one that interests every Dentist, personally. For Four two-cent stamps will send valuable pamphlet—A Sensitive Point; 32 pages.*

6-6-X-O.

CHAS. HOUGHTON,

Dentist, Batavia, N. Y.

J. R. MICHAEL'S PREPARED DENTAL FLOSS

Is the best and purest Silk Floss in use. It is full size and length—12 yards to the spool. Delivered free to any part of the United States.

For one dozen J. R. Michael's Prepared Dental
Floss, - - - 84 cents.

Address,

J. R. MICHAEL,

STEWART BUILDING, N. Y. City.

11-5-1/6-1/4

TO DENTISTS.

A GRADUATE of the Philadelphia Dental College would like a partnership with an established practitioner, or will work for a good salary. Can work the Sheffield Crown and Bridge System. Has no cash to invest, but will make it a good thing for the right man.

Address,

GRADUATE,

Care of the Editor Independent Practitioner,
Buffalo, N. Y.

DR. G. C. DABOLL

Desires to inform his professional friends that he is permanently located at

NO. 14 AVENUE DE L'OPERA, PARIS, FRANCE,

Where he will be at the service of any patients whom they may kindly refer to him.

4-6-AN4-1/4

AKRON DENTAL RUBBER

The materials of which this Rubber is composed
are prepared by new processes,
which insure

ABSOLUTE PURITY,

Resulting in a Product of Wonderful

DENSITY, FIRMNESS AND STRENGTH.

It is especially designed to meet the requirements of those who seek to produce the most perfect and artistic work.

It is exceedingly tough and light, and takes a beautiful polish.

Plates may be made very thin without danger of splitting or crumbling away about the edges.

It can be used with the best results for making partial lower dentures, an advantage which no other rubber possesses.

It has the unqualified approbation and endorsement of the profession everywhere, and never fails to give satisfaction.

It will cost you nothing to try it.

Send for samples and prices.

AKRON RUBBER WORKS,

AKRON, OHIO.

Sold by all Dental Depots.

11-5-AN-1

CLAUDIUS. ASH & SONS,

Merchants and Manufacturers

— OF —

Mineral Teeth & Dental Materials

LONDON, ENGLAND.

Have much pleasure in informing the dental profession that their Mineral Teeth can now be procured from the following depots:

R. S. WILLIAMS,	New York
NEW YORK DENTAL MANUFACTURING Co.,	New York
WELCH DENTAL MANUFACTURING Co.,	Philadelphia
SNOWDEN & COWMAN,	Baltimore.
S. LEWIS' SONS,	Washington.
S. CROCKER & Co.,	Cincinnati.
M. A. SPENCER & Co.,	Cincinnati.
CHICAGO DENTAL MANUFACTURING Co.,	Chicago.
PATTERSON BROS.,	Milwaukee.
J. DURBIN,	Denver.
COGSWELL & GEE,	Cleveland.
DAVIS & Co.,	Rochester.
RANSOM & RANDOLPH,	Toledo.
LEE S. SMITH,	Pittsburg.
WHITE & BURDICK,	Ithaca.

Those gentlemen that have not as yet given them a trial, are respectfully solicited to do so.

OUR MINERAL TEETH

Possess the following desirable qualities:

1. *NATURAL FORMS*—

In great variety and of various sizes and lengths.

2. *COLOURS*—

Ranging from very light to very dark shades, and closely resembling the various colours of the human teeth.

3. *TEXTURE*—

Non-porous, so that they can be ground and polished to suit particular cases, therefore being well adapted for Bridge work.

4. *STRENGTH*—

Possessing unusual strength on account of their fine and close texture.

5. *SOLDERING*—

Bearing in an extraordinary manner the sudden transitions of temperature, so that they can be soldered without cracking.

Our Dental Rubbers are much esteemed for their
PURITY, STRENGTH AND SOLIDITY.

Central Depot:

6, 7, 8 & 9, Broad St., Golden Square,
LONDON, ENGLAND.

Branches in Europe:

LIVERPOOL,

83, Mount Pleasant.

MANCHESTER,

82, Grosvenor Street.

PARIS,

22 Rue Du 4 Septembre.

BERLIN,

68 Jagerstrasse, W.

VIENNA,

1, Judenplatz 5.

COPENHAGEN,

3, Boldhusgade.

HAMBURG,

62 and 63, Gansemarkt.

ST. PETERSBURG,

19, Kleine Morskoi.

"ACME GOLD FOIL."

ABSOLUTELY PURE GOLD.

After twenty years as a practical Gold Beater and Refiner of Gold and Silver, and manufacturer of Gold Leaf in various shades and qualities, I am in position to state that there is no purer quality of Gold Foil manufactured, no matter how great the reputation of others, whether domestic or foreign.

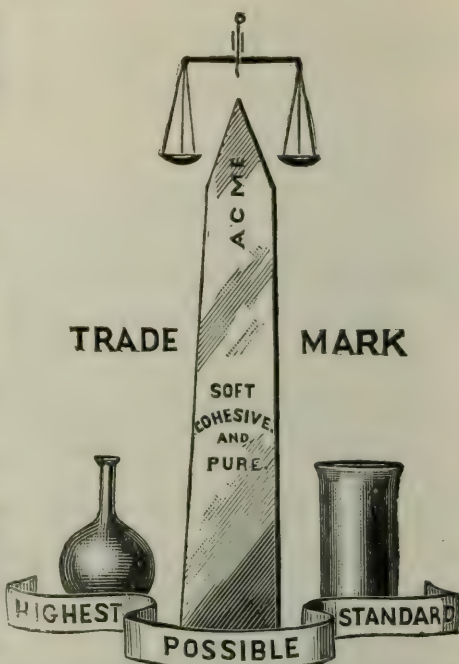


Cylinders \$30.00 per oz.; $\frac{1}{8}$ oz. \$3.75. Acme Cylinders are made from our Acme Soft Foil, which is absolutely pure. The name Acme is given to this Gold for the reason that it is as pure as it is possible for chemical agencies or human hands to produce.

Acme Soft Foil, \$28.00 per oz.; \$3.50 per book of $\frac{1}{8}$ oz.

Crystal Surface, or Corrugated Foil, softest working Foil known, \$28.00 per oz.; \$3.50 per book of $\frac{1}{8}$ oz.

Acme Folded Foil, a convenient substitute for Cohesive Foil, easy to handle and anneal \$28.00 per oz.; \$3.50 per $\frac{1}{8}$ oz.



Appended a few of numerous Testimonials:

I think Henry's Gold the finest, *without any exception*, I ever used.
BROOKLYN, N. Y., Nov. 21, 1885.
FRANK P. ABBOTT.

MR. HENRY,

Will you have your agent call on me. I had a book ($\frac{1}{8}$ oz.) of your gold a long time since, and when the agent last called I told him I didn't know whether I liked it or not. Since then I found a package unopened, have used it and like it much.

Truly,

A. N. CHAPMAN.

NEW YORK, Aug. 22, 1885.

MR. T. J. HENRY,

Dear Sir,—Your agent left one book of your Corrugated Gold Foil for trial, and I would not be doing you justice without saying that it works equal to any Gold I have ever used. Please send agent with a further supply and oblige,

Yours, respectfully,

V. VAN VLECK, M. D.
284 6th Ave.

One of the many testimonials we receive almost every hour in the day:

Dear Sir,—Please send your man with Foil.

Yours truly,

NEW YORK, Sat., Nov 14, 1885.

N. M. BECKWITH,
21 West 37th St.

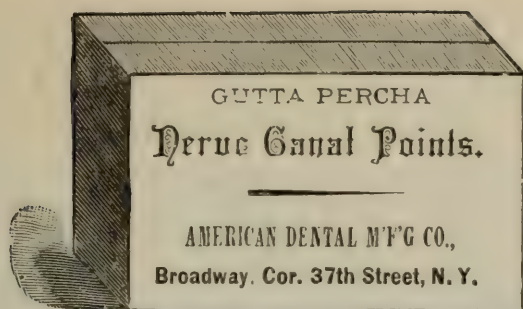
Gold will be sent free of cost to any part of the United States or Canada. Remittances must accompany all orders.

ADDRESS,

T. J. HENRY, GOLD LEAF FACTORY,
No. 16 Centre St., N. Y.

ESTABLISHED 1875.

P. S.—Dental Depots supplied at a liberal discount. Special Brands of Gold manufactured according to orders.

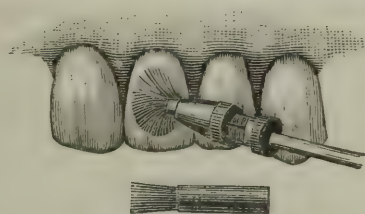


To those that have never seen or used the little Gutta-Percha Nerve Canal Points, manufactured by us for the past year and a half, we would say, that they have been well received, and extensively used by the profession generally. They are very carefully made and nicely tapered, being well adapted for the purpose for which they are intended.

The quality of Gutta-Percha from which they are made is the very best, being good and tough, permits bending in any shape, and easily worked.

PRICE PER PACKAGE OF 125 POINTS, 50 Cents.

SMALL POLISHING BRUSH.



The brush will be found very useful in cleaning teeth and finishing fillings; also in polishing the walls of cavities in preparing them for filling.

The brushes are made in three grades—soft, medium, and stiff—and adapted for use with either the Klump Port Polisher or the R. A. Port Polisher.

Price Per Dozen, 50 Cents.

Price for R. A. Port Polisher, . . . 30 Cents.

AMERICAN DENTAL MANUFACTURING COMPANY,
BROADWAY, Cor. 37th STREET,
NEW YORK.

CAULK'S FILLING MATERIALS.

ESTABLISHED 1877.

CAULK'S DIAMOND CEMENT

AND OTHER DENTAL PURPOSES.

EXCELLENT FOR LINING CAVITIES

MOUNTING ARTIFICIAL CROWNS.

FOR FILLING TEETH,

GRAY. YELLOW. PRICE, \$2.00. MEDIUM. LIGHT.

TWO COLORS.—Gray and Yellow, \$1.50 per Package.
ONE COLOR.—Gray, Medium, Yellow, or Light, 1.00 “ “

THIS COMPOUND NOW STANDS WITHOUT A RIVAL.

From Five to Seven Years' Test by Leading Dentists Throughout the World has Proved it to be All That Has Been Claimed for it.

For Mounting Artificial Crowns it has been highly recommended; is non-irritating, non-conducting, in harmony with tooth structure, has no shrinkage or expansion, and excellent for lining cavities and capping pulps. IT WILL HARDEN IN WATER OR SALIVA. It does not deteriorate with age. Two or more colors blended together (in mixing) will produce any shade desired. The liquid does not crystallize. One writer says it is the "King of Cements." The demand for it increases. If you have not already tried it, send one dollar for a package.

Fillings that have been standing in the mouth *over* three years, in comparison with other plastic material in the market, show not only its SUPERIORITY, but it has proved to be *more insoluble* than many of the so called insoluble Cements. We have increased the quantity of liquid, and all bottles are lettered "*Caulk's Diamond Cement.*"

It has been pronounced by many to be *harder, more durable, more dense, easier to work, receives a higher finish, and gives better satisfaction* than others in the market.

**THE UNIVERSAL VERDICT IS THAT CAULK'S DIAMOND CEMENT IS THE BEST.
A FAIR TRIAL WILL CONVINCE YOU.**

THE Independent Practitioner.

VOL. VII.

JULY, 1886.

No. 7.

Original Communications.

NOTE.—No paper published or to be published in another journal will be accepted for this department. All papers must be in the hands of the Editor before the first day of the month preceding that in which they are expected to appear. Extra copies will be furnished to each contributor of an accepted original article, and reprints, in pamphlet form, may be had at the cost of the paper, press-work and binding, if ordered when the manuscript is forwarded. The Editor and Publishers are not responsible for the opinions expressed by contributors. The journal is issued promptly, on the first day of each month.

THE USES OF FERRULES IN REGULATING TEETH.

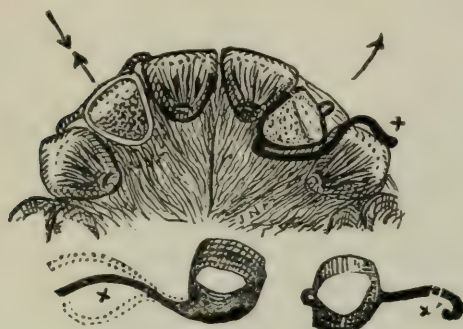
(ROTATING, DRAWING AND RETAINING DEVICES.)

BY J. N. FARRAR, M. D., D. D. S., NEW YORK CITY.

AN EXTRACT FROM AN ILLUSTRATED LECTURE, DELIVERED BEFORE THE MASS.
STATE DENTAL SOCIETY, AT BOSTON, DECEMBER 11, 1885.

Rotators.—Rotating apparatus consists of two requisites; the instrument of force and the means of attachment. These may be combined in one or in more pieces. While the former has been considered comparatively easy to devise, the means of firmly connecting it to the tooth has been regarded as quite the contrary. To overcome this difficulty I have devised several fixtures more or less complicated, some of which are simple and easy to operate, but most of them are practical only in the hands of experts. Since the advent of quick-setting cements, however, I have been able to increase the number of the simpler class through the aid of ferrules, which make the firm attachment of any instrument of force possible, under almost any circumstances.

Ferrules used to permanently bind broken and decayed teeth, subsequently filled with amalgam or other cement, have been in vogue



(Fig. 1.)

for a long time; but the use of the ferrule, as an instrument for the purpose of turning teeth, by the aid of a lever connected with it, is of a much later origin. When and by whom this was first attempted, I know not. Several years ago Dr. Atkinson mentioned having made something of the kind in the form of a long-handled

dipper; but until the introduction into dentistry of phosphate of zinc made it possible to fix ferrules upon the teeth quickly, the idea was not considered very practical.

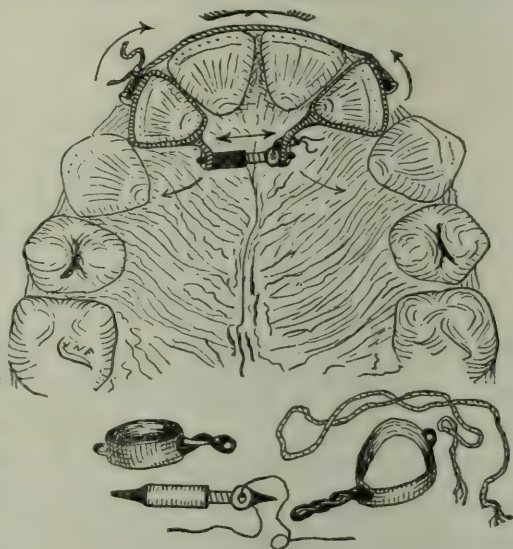
The principle of construction and application of all such devices is as follows: A strip of pure gold plate (No. 30), cut long enough to band the tooth and overlap a trifle, is rolled and tied with steel hair-wire to hold the lap in place; after which it is laid in a wire nest, having a handle made of the same material. Having then applied borax and solder, it is held in the flame of an *ordinary office spirit lamp*.

For the lodgment of the point of a jack-screw, a hole drilled through the ferrule is often sufficient; but when a deeper pit is necessary, a socket may be attached with solder; wire, however, is more useful.

When such auxiliaries as rings or staples are desired, a hole is drilled of the size of the wire. In each of these holes is then placed one end of the wire, to fix it in place while being soldered.



(Fig. 3.)



(Fig. 2.)

Instead of gold wire, I generally prefer platinum for levers, staples, etc., because being more pliable

and less elastic its form is more easily changed, if required during the operation. Of course the degree of stiffness in these wires is governed by the quantity of metal.

This quantity may be embodied in a single wire, or in smaller wires doubled and twisted. When a loop at the end is needed for attachment to other things, the latter is often preferable.

When all is ready, the ferrule is placed upon the tooth and the wire bent to the proper form, after which the ferrule is cemented to the tooth with phosphate of zinc, while



(Fig. 4.)

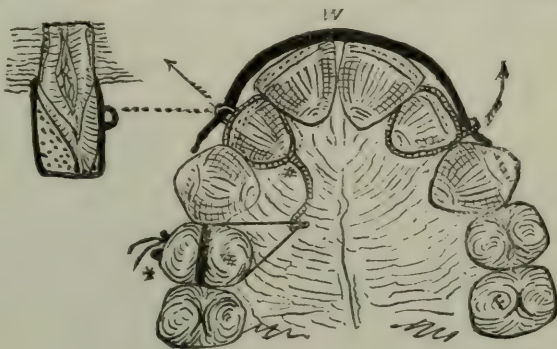
of a *sticky* consistency. After the cement has hardened the ferrule portion of the apparatus may be relied upon for “wrench forces,” or for attachment of any desired instrument of force.

One of the simplest methods of turning a tooth set in a ferrule having a platinum wire lever, is by

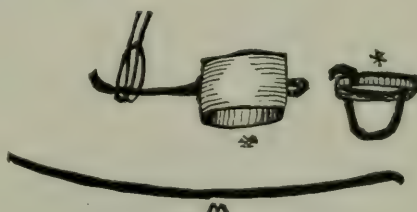
bending the wire from day to day so that it will firmly bear upon

an adjacent tooth in such a manner as to lift upon the ferruled tooth, (Fig. 1.) This, however, requires great care. In order to avoid causing pain, the ferrule end of the lever should be firmly held with pliers while it is being bent at the other end by another pair.

Fig. 2 illustrates one of my favorite methods of turning two lateral incisors at the same time, with one jack-screw. To prevent the teeth from being driven

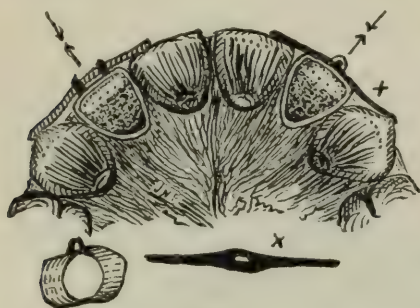


(Fig. 5.)



(Fig. 6.)

outside of the esthetic line of the dental arch by the force of the screw, they are tied with a string or small wire passed through staples soldered to the labial surfaces of the ferrules, as shown. The lower portion of the figure illustrates the apparatus in detail.



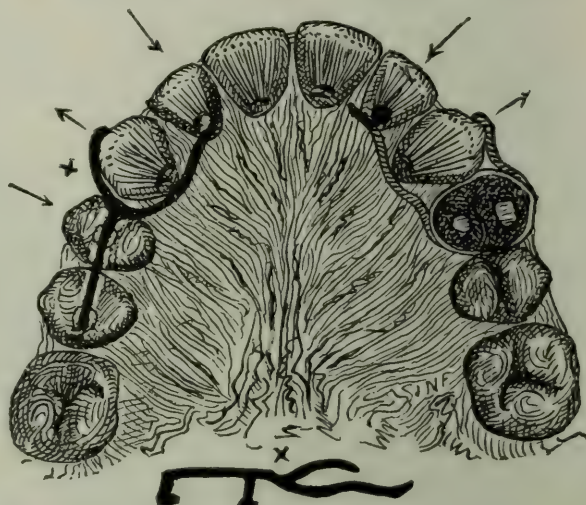
(Fig. 7.)

serves as a spindle point.

In these double cases, where one tooth requires a greater degree of rotation than the other, the differences may be balanced by corresponding differences in the length of the levers. A lever may be an inch in length, or it may be only a staple.

Fig. 4 illustrates, on the right side, a simple device for moving a lateral incisor from the posterior position into line, by means of a wire soldered to the labial surface of a ferrule. The operation consists in bending the wire from day to day until it is straight, as shown on the left.

There is sometimes a drawback in this method, through an adverse movement of the tooth or teeth upon which the lever bears, but such teeth will correct themselves upon regaining their liberty. When the tooth is regulated the same device may serve as a retainer. This leads me to the consideration of retainers in general.



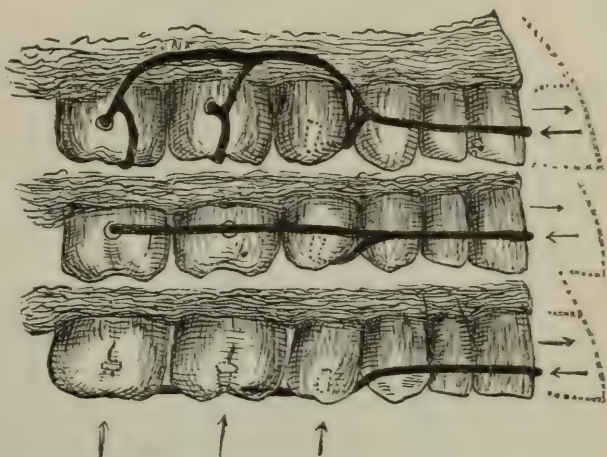
(Fig. 8.)

Retaining Apparatus.—When two lateral incisors have been forced into position (Fig. 2), they may be temporarily retained very easily by a wire through staples soldered on the labial surfaces of

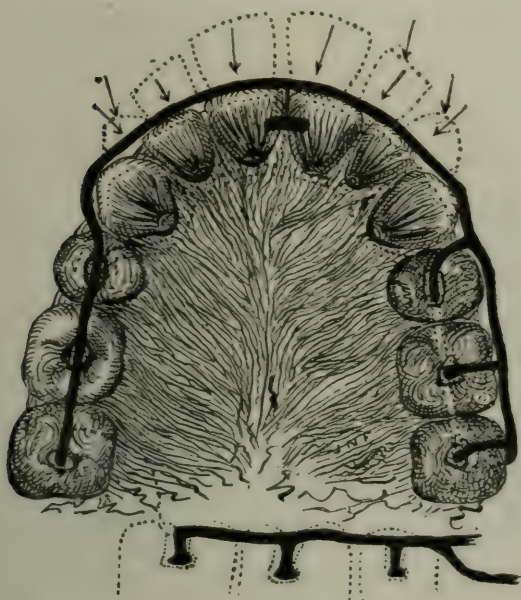
the ferrules, so that the wire will rest upon the anterior surfaces of adjacent teeth, as shown in Fig. 5. I have, by the same means, drawn instanding laterals into line by the elasticity of the same device, when they did not need turning, but this is generally a painful process. (Fig. 6.)

Fig. 7 illustrates a modification of this, which consists in retaining the teeth independently by a shorter piece of wire, extending each way from the staple, so as to rest upon the opposite adjacent teeth. Both of these devices, however,

are so unsightly that I never use them, except as a temporary resort, while other teeth are being regulated.



(Fig. 9.)

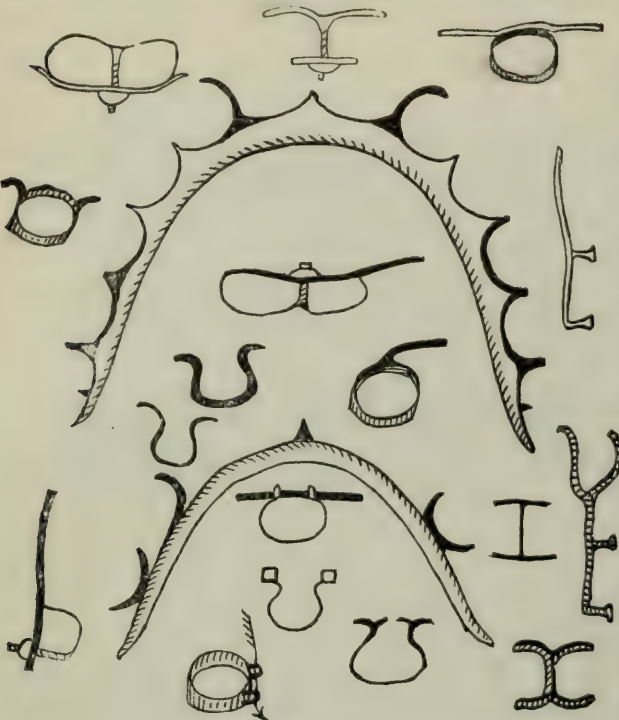


(Fig. 10.)

A ferrule may sometimes be made useful as a portion of a retaining apparatus, by having wire fingers soldered to it in such a manner as to reach out from the ferrule against the tooth to be held in place. Of course it should be remembered that the force upon the finger, by the tendency in the regulated tooth to return to its former place, must be guarded against in order to prevent other teeth, upon which the fixtures bear, from moving.

This may easily be obviated by other fingers to bear elsewhere. For instance, to retain in position a lateral incisor that has been moved into line from an

instanding position, by a wire finger extending from a ferrule placed on the first bicuspid and projecting forward, escaping the lingual surface of the cuspid to bear upon the incisor, there should be a branch wire to bear on the labial surface of the cuspid, as shown in Fig. 8.



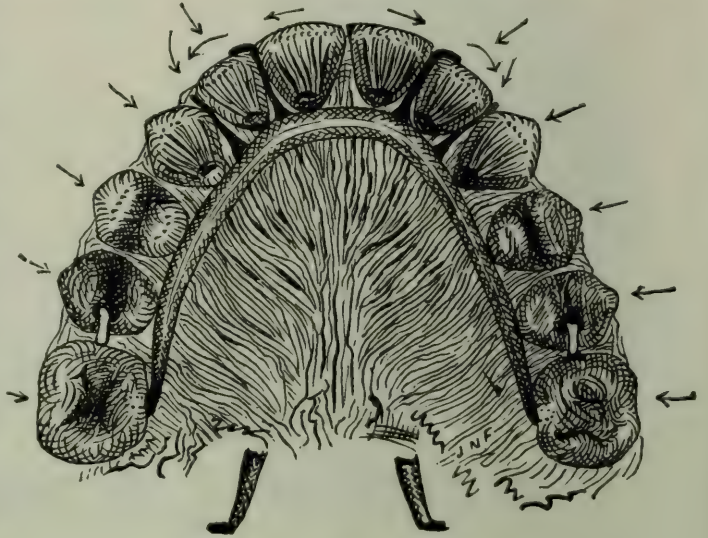
(Fig. 11.)

If the ferrule is properly fitted and set, it may remain many months without harm, like a gold thimble crown. My favorite method of retaining teeth, however, when practicable, is by the use of wires without ferrules, bent into the proper shape, one end to bear upon the regulated

tooth and the other anchored in a cavity elsewhere with phosphate of zinc or amalgam.

To give greater firmness of anchorage, a branch wire should extend into another tooth. One form of this device is illustrated in the same figure.

Both of these principles are applicable in retaining *protruding* front teeth that have been *regu-*



(Fig. 12.)

lated. As an illustration: A wire having T's to rest between the incisors to prevent it from impinging upon the gum, may extend

around in front, inside or out, and be anchored in ferrules or in cavities in the sides of the molars, or in the grinding surfaces of the bicuspid and molars. When ferrules or shell-crowns are used, the wires may be fastened to them with solder, or they may pass through smaller ferrules soldered to the larger, and the wire fixed in place by small thumb-screws or nuts, through or behind the smaller ferrules. These wires may be bent variously as shown in Fig. 9, but the strongest plan is as illustrated by Fig. 10.

To retain teeth after the *enlargement* of the dental arch, instead of the old-fashioned roof-plate, a skeleton device of half round gold wire is preferred. Several modifications of this are shown in Fig. 11.

Fig. 12 illustrates one of my favorite varieties of this class of fixtures for retaining such teeth. On the end of each leg is a pin point which rests in a pit in a molar tooth, and for holding in position rotated lateral incisors by means of delicate spurs of clasp metal. These pits I often make previously, for retaining regulating apparatus in position.

The arrows on these several figures show the direction of the tendency of the regulated teeth to return. The number and form of smaller retainers, which I have devised, are numerous; several are shown in Fig. 10, all of which are so plainly illustrated that they need no further explanation.

D. D. S. OR M. D.; WHICH?

BY GEO. H. CHANCE, D. D. S., PORTLAND, OREGON.

So much has been said and written on Dental Education that to the superficial thinker the subject may seem to have been exhausted, but as the question is still an open one, any new mode of presenting it will doubtless be acceptable to those who can and do look beneath the surface.

In previous discussions on this subject the divergence in the various views presented appears, to the writer, to have been caused

mainly by a want of agreement among the disputants as to what is the true relation that dentistry of the present day sustains to the profession of general medicine.

It will be admitted, I think, that Dental Surgery is a mechanical art applied, from a medico-scientific standpoint, to the dental organs and their associate parts, for the arrest and cure of disease, precisely as general surgery is a mechanical art applied from the same standpoint to other parts of the human body, and for a similar purpose, viz.: for the arrest and cure of disease. Now, if the foregoing definition be accepted as correct, it logically follows that dental surgery is a legitimate branch of the healing art, and consequently a department of general medicine.

Having thus settled the status of our profession, it next devolves upon us to consider what is the best mode of teaching and training, and thus qualifying those who are to become dental surgeons.

If a young man desires to become a shoemaker, he certainly would not go to a tanner expecting to obtain the desired knowledge, neither would he go to a maker of lasts, or to one who makes shoe-pegs for a livelihood, simply because leather, lasts and shoe-pegs are needed in the making of a boot or a shoe. The tanner may be never so well versed in his line of business, the lastmaker may be equally competent, and the shoe-peg man may excel in the making of shoe-pegs, and each of the parties named may be able to readily distinguish between a child's shoe and a lady's slipper, or a gentleman's walking boot, but their combined knowledge could not by any stretch of the imagination constitute either or all of them competent instructors in the art of making boots and shoes.

No, the young man, if he desires to excel in the calling he has chosen, must select for his instructor one who makes the anatomy of the foot his particular study, both as to its physiological and pathological conditions, thereby enabling him to so construct a boot or a shoe that it may be made an ornament to the foot and a comfort to the wearer. Nor is this all. He must in the very nature of things (while he may not be familiar with all the details) understand the underlying principles which govern in the tanning of leather, the turning of shoe lasts and the making of shoe-pegs; this knowledge he needs to enable him to intelligently select such materials and such appliances as will meet the requirements of each particular foot. With such an instructor as is here indicated,

there can be no doubt that a young man with a fair amount of constructive ability will, with proper application, in due time become successful in the calling of a shoemaker.

Let us now apply the illustration, as far as it may be applicable, to dental surgery. A young man possessing the necessary qualifications desires to enter our profession as a student. Where shall he go, and how shall he proceed to acquire the knowledge necessary to make him a first-class dentist? Please bear in mind that we speak of a dentist; not a physician or a general surgeon, but a dental surgeon—one whose life-work is to be devoted to the arrest and cure of diseases of the dental organs and their associate parts. In this connection we may ask: What are the qualifications needed before he should present himself as a student in dental surgery? It may be answered that the candidate must possess moral quality, mechanical ability and artistic taste, together with the benefit that a good common school education, including Latin, secures. He must also possess enough brain-power to enable him to mentally digest and thereby understand the principles involved in the future study and practice of the profession he has chosen.

The next question to be answered is, where shall such a young man go and how proceed?

He certainly would not go to a lawyer because the lawyer happens to be well versed in medical jurisprudence, nor to a law school where such things are taught. Neither would we expect him to go to a druggist because the druggist is a graduate from a school of pharmacy, and therefore knows all about the pharmacopœia and is an expert in compounding drugs. But let us suppose the young man has satisfied himself that dental surgery is a department of medicine, and, being ambitious as well as conscientious, thinks he ought to be an M. D. before he practices the specialty. With this thought in his mind he consults the family physician, who is an M. D. of long standing, and for whose opinions the young man's mother has a profound respect. It matters not from what or which medical school the M. D. graduated, whether it be Allopathic, Homœopathic or Eclectic, because they all graduate M. D.'s, you know, with equal rights and privileges under the law; therefore "they are all honorable men."

But this particular M. D., with all the pompous dignity so characteristic of an M. D. of that class, who assume to believe that

the sum total of all medical knowledge worth having circles around and centers in those mystical awe-inspiring letters, M. D., replies to the questioner thus: "Young man, I am a physician, and therefore have neither time nor inclination to give attention to such small matters as tooth-doctoring, or what some are pleased to dignify as Dental Surgery. No, young man, I am an M. D., and my advice to you is, if you really desire to become a *professional* man, go to college and get your degree of M. D.; you can then fool away all the balance of your days on teeth if you wish. I am sure no respectable physician will raise any objections. I rather think they would commend it. In fact, I, as an old member of the medical profession, would be glad to see some of our M. D.'s take up that specialty. It would help us physicians who pay no attention to such things, and we would then have some one with whom we could consult in obscure cases of disease without lowering our dignity as professional men, for, do you know, those infernal things called teeth play the very mischief with some of our patients, so that at times we are at our wits' end to know what to do next. Several times of late that modest fellow with the absurd title of D. D. S. stuck at the end of his name, has helped me out of scrapes with my patients by telling me what was the matter; but then he knows some things about medicine and is a good, honest fellow, so you see I don't mind consulting him, especially as he saves me a great deal of trouble by attending to my children's teeth without costing me much. Yes, sir, go to college *first* and get your M. D. degree, then you can fool around teeth to your heart's content, and if you should blunder sometimes it won't make much difference; we medical men will stand by you. That's my advice without a fee."

But our would-be student, not being entirely satisfied with the advice given, calls in the evening on "that modest fellow with the absurd title, D. D. S." The dentist receives the young man politely, and learning his mission invites him to be seated, and to excuse him for a few moments while he finishes a letter he is writing to a former classmate.

While the dentist is finishing the letter the young man glances around the waiting-room, and his eye resting on the bookcase, he rises from his seat to examine the kind of books a dentist reads, and discovers to his surprise that many of the books on the shelves are exact copies of the identical text-books that his friend, the M. D.,

has in his bookcase. It puzzles him a little, but the letter is finished, and, the dentist returning, the two enter into conversation.

Young Man—Why I see you use the same kind of books that Dr. Pompous, our family physician, uses.

Dentist—Yes, to a very large extent, but not altogether, as there are some medical books which, while they are essential to a physician, would be comparatively useless to a dentist, as they do not come within the range of his practice; however, we try to keep posted, and therefore read everything which we think will aid us in a more thorough understanding of our specialty; but of course as the fundamental principles which underlie both general and special practice are the same, we must of necessity use the same general text-books, viz.: those on chemistry, anatomy, physiology, pathology, therapeutics, etc., and that will account for the books you see on my shelves. But in addition to the general text-books we have quite a list that treat more extensively of our specialty, with which we must also become familiar. All these are used in our dental colleges.

Young Man—Then you think a medical college is not the place for a young man to go in order to study dental surgery?

Dentist—Most certainly not. Not but that there are many things taught in a medical college that are absolutely necessary for a dentist to know in order to qualify him for the practice of his profession. These essential things are taught in our dental colleges, but are so arranged as to combine both theory and practice, thus making it far easier for the student and much safer for the public, from the fact that when a graduate in dentistry goes forth from the college in which he received his instruction he does so as a practitioner; young, it is true, with much to learn, nevertheless a practitioner, well grounded in the principles and practice of his profession. Not so with the medical graduate. He leaves his Alma Mater with ideas, facts and theories all commingled, having had no opportunity to separate the wheat from the chaff, and therefore all the practical part of his profession he has yet to learn outside of the college walls, and that too after he has been duly accredited as fully competent to practice his profession. No, my dear sir, a medical college is not the place to study dentistry, for as a rule the professors know absolutely nothing about the dental organs, except what they

may have gleaned in a general sort of way. They are not to blame by any means, for as you grow older you will learn that this world, within and without the colleges, is made up largely of two-talent men, who can hold only so much at a time.

Young Man—But would it not be best if one had the time and money to first graduate in general medicine and then take up the specialty?

Dentist—There are some very worthy dentists who think so, but I think not, for the reason that it would seem to me like taking a long, circuitous, uncertain route through the woods, not knowing where you will come out, rather than to travel over a shorter, more direct and fairly beaten path by which to reach the same point. Besides, no man can serve two masters, and you would have to leave one to serve the other, for by dividing the service you could be faithful to neither.

Young Man—Why so?

Dentist—Because, as I said, this world is run, so to speak, by the two-talent men, and pardon me in assuming you to be one of such. You have neither the brain-power to retain the knowledge, or the physical ability to perform the labor necessary; to use another simile, it is impossible to put a quart of water into a pint cup. You can only fill the cup, and as most of us dentists hold only about a pint we must therefore keep ourselves filled with that kind of knowledge that will do us the most good and make us the most useful in the profession we have chosen. By first taking the medical course you will have gained but little; your mechanical ability will have to be developed, your eye educated, your mind taught to conceive and to fully realize and to appreciate how such a simple thing as a human tooth, when in an abnormal condition, may be instrumental in causing bodily disease, and sometimes even death.

Young Man—But I understand your dental colleges are not all models of perfection?

Dentist—Not by any means, and let me assure you there are none who feel more keenly and appreciate the fact so much as the high minded, right thinking dentist, who would it were otherwise, and there are many such in the ranks of our profession. Rome was not built in a day, and it will take time to fully perfect and round out our young profession to its ultimate proportions, for like our country and its form of government, the dental profession was left an

orphan with none to take it in. Yes, literally, out in the cold. But its members have struggled on, fighting with the weapons of their warfare until, like our country's flag, emblem of liberty, the American dental ensign of D. D. S., is known and (when not carried by pirates) respected throughout the civilized world.

Young Man—But have you no M. D.'s who practice dentistry exclusively?

Dentist—Oh, yes, quite a large number, and I assure you some of them are large hearted men, to whom the profession owes a debt of gratitude, for they have helped to formulate and arrange our course of studies and in many other ways have materially assisted us in the progress we have made as dentists. We have some M. D.'s amongst us, however, who are so wedded to their Alma Maters and their old ways of teaching that it warps their judgment in matters pertaining to dental schools. But we have amongst us another class of M. D.'s who, while they are good men and excellent dentists and who doubtless means well, cannot look at matters dental except through the too strongly focused old medical school glasses, which distorts their vision and thus unfits them for safe advisers in dental school education. But it is said that 'revolutions never go backward,' and the dental college being of American origin will stand as such, from time to time improving its methods, until all that seems crude and unfinished shall have disappeared, and dental surgery shall have become symmetrical in all its proportions as a branch of the Healing Art. * * * So, my dear sir, if my advice is worth anything, I would say first, that if you wish to become a dentist in something more than name, you must avoid the professional pirate, whether he sails a large ship or a small one, for we have both kinds. Secondly, place yourself with a respectable, well-informed dental surgeon, who will direct you in your preliminary studies and properly prepare you for a dental college. Thirdly, don't bother yourself about the mystical title of M. D., for after you have honorably graduated as a dental surgeon you will know why it is that in this country, at least, the once honored title of M. D. is largely a thing of the past. And when you are a dental surgeon, if you be a true man and would do unto others as you would they should do unto you, you will then seek, in general medicine, in the arts and sciences, or wherever else it may be found, what you will feel you most need—more light and more knowledge.

TEETH WITH EXPOSED PULPS. DEVITALIZATION AND SUBSEQUENT TREATMENT.

BY B. MERRILL HOPKINSON, D. D. S., M. D., BALTIMORE, MD.

I will venture the assertion that the literature of the above subject is more voluminous than that of any other known to our specialty, and it is indeed reasonable that it should be so, for it is a subject of great comprehensiveness. The management of this class of teeth is surrounded by all sorts of difficulties, and with too many in the profession a vast deal of uncertainty, and demands on the part of the operator, in most cases, his highest skill and most painstaking care. It would appear that the subject under consideration is really little understood, notwithstanding the fact that patients daily seek relief from pain due to aching and exposed pulps, and everyone practising our art has ample opportunity to study the treatment of the dental organs in this condition, as well as the opportunity of reading and profiting by the good advice of our eminent men. I am obliged to say that my observation teaches me that the majority of men fail in their treatment. I believe the large number of failures to be due to one of two causes, viz.: either carelessness or improper manipulation. This want of success calls forth the indiscriminate condemnation of pulpless teeth by certain gentlemen in general practice, who, I am sorry to say, do not understand the subject, and draw their conclusions, naturally enough, from those cases they meet with, in which serious trouble has arisen after a pulpless tooth has been filled. I have desired for a long time past to write this article, but owing to numerous other duties I have been obliged to put it off, until, having recently relieved myself of several matters which occupied a great deal of valuable time, I am now able to carry out my intention, and I have the honor to submit the present paper to the profession. I have no desire, for the most part, to lay any claim to originality, nor do I regard myself as infallible, but I must say that after a moderately successful career of over seven years of active practice, with the records of hundreds of pulpless teeth filled, I have yet to learn of the first one which, having been declared satisfactory, has ever returned to me with a his-

tory of subsequent annoyance. It may be said that seven years is too short a time to decide whether such teeth may not give rise to serious trouble, and also, that some of my clients for whom I have operated may possibly have failed to return to me, but have sought advice, and perhaps consolation, from some one else about an aching member. With regard to the first proposition, I will say that I regard seven years quite long enough to test a filled pulpless tooth, as well as quite long enough from time of operating for the patient to return to that state of dust from which we are all supposed to have sprung originally, and not require teeth, and if a filled tooth lasts seven years and performs its proper function satisfactorily, all reasonable people will, I am sure, agree in saying that the original operation was well done. I will answer the latter proposition thus: I am not aware of losing any of my clients, still, as I said before, it is possible, and I can only say if any of my operations have been unsuccessful I am not aware of it, but would be most happy if there are such cases, if I could have them brought to my notice. Let us begin at the beginning, and for convenience of description I will take a case from practice.

Enter an individual in distress, either desiring extraction or relief from pain by "killing the nerve," as the laity are pleased to express it. I find a second molar in the left superior maxilla very carious upon the distal, extending to and including a small part of the grinding surface. After carefully cleansing the cavity with a warm carbolized solution, and making a thorough examination, cutting away more of the grinding surface if necessary, I find an exposed pulp. The patient gives a history of continuous pain for a considerable period, and as I pass a spoon excavator over the exposure, slightly enlarging it, I discover an oozing of pus. The indication to me is to devitalize immediately. A small pellet of absorbent cotton is saturated with pure wood creasote; upon this is placed, with a small hoe excavator kept for the purpose, as much arsenic as can be picked up upon the hoe, say gr. $\frac{1}{40}$, and the pellet is then covered completely with sulphate of morphia. In a majority of cases I use a considerable quantity of morphia, which does not interfere with the intended action of the irritant poison, but in all cases, in my experience, gives immunity from pain; indeed, in many cases the sudden cessation from agonizing pain is marvelous, and I have frequently had the

pleasure of seeing a patient fall asleep in my chair after passing days and nights of intense suffering. The double action of morphia is of course generally known, and when applied topically it acts upon the periphery of nerves, as in a case of odontalgia, and upon the nerve centers when administered *per orem*, or by hypodermatic method. The knowledge of the local action causes me to prepare my own devitalizing application each time I require it, so that I may vary the quantity of morphia as required in each individual case, and I regard this as of incalculable benefit in the beginning of treatment of exposed pulps, especially in those cases when the aching has been prolonged and violent. Another equally great advantage in preparing the application each time required, is that the quantity of arsenic can also be varied, and I am sure there is as much need of this variation in different cases as there is in the administration of potent drugs in general practice, in the treatment of different individuals. The quantity of creasote is also a prime factor of success in the reduction of pain. I regard the so-called "nerve paste" as very inferior to individual preparations, and a premium offered by the shops on laziness, as well as an incentive to pursue a miserable routine practice which is always condemnable. I would advise a universal avoidance of all such preparations by practitioners, and at least a trial given to the above method by those who have never practised it. The pellet, as prepared, is carried carefully into the cavity and covered over with a dry pellet; both are loosely impacted, and merely the surface of the latter piece coated over with sandarach varnish, being careful not to crowd the application so as to give rise to pain, and also not to allow any of the varnish to find its way into the cavity where it may act as an irritant. If there be no adjoining tooth, or if necessary for any reason, the application is securely ligated in its place. In my opinion the necessity for a covering of wax or gutta percha does not exist, and I regard their application as useless, unless indeed in using "nerve paste" we think we are using gr. $\frac{1}{40}$, when in truth we are using gr. $\frac{1}{4}$, $\frac{1}{2}$, or more, and there is danger of it being "pasted" over the gums or swallowed; in such a case I would certainly advise hermetical sealing. After a very large experience with this class of teeth I have never known of any gingival irritation following my applications, and, indeed, it is impossible that it should occur. I might add that while making the application I

guard the cavity from moisture by means of a napkin. Such an application I allow to remain as near twenty-four hours as may be convenient. As a rule, I find upon removing it, after the lapse of that time, that it has accomplished the desired purpose and I proceed to remove the *debris*. Before speaking of the manner of opening the pulp cavity and canals I must mention that, for some time past, in the cases I have chosen for the following method of practice, I have had gratifying success, viz.: with the use of hydrochlorate of cocaine, as well as with the Fl. Extr. of Cannabis Indica, in removing the pulps of teeth upon the first visit of the patient. In these cases I apply the dam, make an application, allowing it to remain from five to ten minutes, proceed as far as possible, make a second, perhaps a half dozen, and in this way remove the pulp by degrees: sometimes there may be slight pain, often the operation is painless. This method occupies more time than a man in full practice is usually able to devote to it, and until we find an agent which will anæsthetize the pulp more thoroughly and rapidly, most of us will continue the time-honored and safe method of devitalization with arsenic. I regard a second application of arsenic as an impediment to ultimate success, and think the cases are very rare when it is necessary to use it a second time; still, if necessary, a smaller quantity should be used. Where there is considerable pain experienced in the removal of the *debris* after supposed devitalization, I think it a good plan to employ cocaine or cannabis indica, and in such cases they act much more rapidly. I also find in teeth of very dense structure that the application of zinc chloride, in full strength, to the canals, acts most happily, and enables me to remove the remains easily and painlessly. This pain is due to the membrane lining the canals and pulp cavity; it is continuous with the periosteum, and in some cases has great power of resistance, the devitalizing application seeming to have but little effect upon its vitality.

The first thing requisite to remove a dead pulp from a tooth is to gain access to each root in the direction of its long axis. This is a point upon which I am most decided, and in the case under consideration I chisel and burr away the grinding surface until I can enter each root straight. I have read remarkable stories of operators working through one-eighth inch openings in the grinding surface of a tooth, rolling pulpstones backwards and forwards.

removing every particle of dead pulp, and filling to the apex through such openings. I emphatically believe that in order to succeed universally, we must have room, and plenty of it, and I firmly believe my success with this class of operations has been due in a large measure to giving myself ample room to treat each case properly. I always regret the necessity which obliges me to sacrifice solid tooth structure, but the necessity being present the sacrifice must follow. In cases of anterior teeth I invariably open from the palatine surface to gain a straight canal, unless the decay is so extensive that I am able to gain it through the cavity already formed by caries. I will say just here that I keep my "nerve broaches," and all such "tricks," securely under lock and key, and only use them when for unavoidable reasons I am unable to enter a canal with a drill. That unfortunate condition has presented itself less than half a dozen times in seven years. In gaining access to the canals the pulp cavity is of course thoroughly opened, and the pulp remains removed, as a rule, with an ordinary bur. The entrance to each canal is then slightly enlarged with a suitable bur, and after finding the direction of the canals with a probe, I remove the pulp from them with flexible burs of various sizes, going as near the apical foramen as possible, and in so doing use very little force upon the hand piece. In using these canal drills I have never drilled through the side, nor forced one through the apex of a root. Do I always go to the apex? I go as far as possible, not to do any harm, and a sufficient distance to attain success; further than this deponent saith not. Great care is of course required in using these engine points in a root canal, but I am of the opinion that with proper handling they are as harmless and at the same time as valuable instruments as we have at our command in the treatment of devitalized teeth. In removing the pulp from small or flat roots I often enlarge them, but my progress is very slow, and I use my probe constantly to discover the direction of the canal. I frequently find, as I suppose everyone does, that the canals of anterior buccal roots of superior molars are very small, and many times so small that they are not discoverable. Those usually belonging to the flat variety are anterior root canals of inferior molars and an occasional bicuspid root canal. Third molar roots are very uncertain, and I rarely attempt to save these teeth if the pulp cannot be saved alive.

To proceed with my case. I have removed all the pulp, or to be modest, all I could find, and, as is my practice in those cases which I have devitalized, I wind my probe with a thin film of absorbent cotton, dip it into carbolic acid and pack it carefully into the root, repeating the same process in each root, always protecting the tooth from moisture; the main cavity I usually fill with gutta percha. My habit is to allow this filling to remain three days when possible, as a test, and at the end of that time to fill the roots and pulp cavity. I prefer metal for a root filling, either gold or tin foil. I have used gutta percha cylinders successfully when a portion of the end of a root has been absorbed, or a foramen enlarged from disuse; in such canals they can be applied when soft most satisfactorily. I cut the foil, No. 4, and fold it into narrow strips, one-fourth of a sheet at a time; these strips are then divided into very small pieces and carried with a small root plugger to the end of the canal. As an antiseptic precaution I always dip the first piece in carbolic acid, other moisture being excluded by means of napkin or dam. I invariably fill three-fourths of the root in this way, and the remainder, together with a portion of the pulp cavity, with gutta percha, preferring not to continue the metal from the orifice of the cavity of decay to apex of root, but rather have an intervening non-conductor, which I believe to be of service even in a pulpless tooth. With regard to the crown filling but little is necessary to say, as I suppose the main features of my operating are the same as those of most of my brothers. Suffice it to say that large complicated cavities in posterior teeth are not filled by me with gold, but with a plastic filling always, and I usually defer this operation for three days from the date of filling roots and pulp cavity.

I have said that I have yet to learn of a single case of a filled pulpless tooth which has returned to me, having given subsequent trouble, which I had declared satisfactory at the time I filled it. There have been cases, some of which I can now recall, that were most unsatisfactory to me, and at such time the patient has been apprised of the fact, and told it was possible that at some future time he might be inconvenienced by the tooth again giving trouble, and warned to return upon the first approach of pain or soreness. Some have returned, and the trouble has been invariably aborted if the patient was seen early enough; if not, by appropriate treatment

the more advanced periosteal irritation has been removed, and I have no record of severe periostitis or alveolar abscess. I have often refused to treat certain teeth, rather advising extraction, and in this way undoubtedly saved myself the annoyance of failure of success. In this class I would mention third molars, as a rule; teeth with very crooked roots plainly discoverable, and certain cases when it has been a physical impossibility to gain straight, or anything like straight, access to the root canals, although certain conditions have been present which have caused me to try to save even such teeth. I have said nothing of my treatment of teeth when the pulps have died without the aid of the specialist, and I will briefly say that this class, provided there be not an abscess or periostitis to complicate them, are most easily treated, and we have many and valuable agents at our command to combat successfully all pathological conditions. The treatment of alveolar abscess or periostitis does not properly come under the title of my paper, but they are without doubt frequent complications: my desire is merely to speak of my mode of devitalizing, preparing and filling the root canals and pulp cavity of such teeth as require devitalization. I will say, in conclusion, that I do not claim in this paper to be able to accomplish that which any other operator may not also accomplish, but I am fully convinced that by the mode of operating, as described, the chances of success are more fully assured than by the uncertain modes as practiced by, at least so far as I know, the majority of operators.

ABOUT COCAINE.

BY DR. C. E. FRANCIS, N. Y.

At a recent meeting of the New York Odontological Society, the subject selected for discussion was "Cocaine and its Effects." Professor Doremus, of New York, the distinguished analytic chemist, was present, in response to a previous invitation, and addressed the society, giving his views concerning the alkaloid. Personally, his experience with this drug had been exceedingly limited, but he had

heard of ill results following its use, and had then in his possession letters from two or three physicians who reported cases of partial paralysis which were *supposed* to have resulted from cocaine applied to aching or sensitive teeth. In one case, a woman had procured from a druggist a vial of tooth-ache drops containing cocaine, which she applied a number of times to quiet her aching tooth, and afterwards experienced "a peculiar feeling of numbness, that might have resulted in death had not a physician been called in;" at least so wrote the attending physician to Prof. Doremus. The second case reported by letter to the Professor had reference to the personal experience of Dr. Hoyt, a physician of New York, who, it was alleged, had been "a victim of cocaine poisoning." Dr. Hoyt being present at the meeting, responded to a request of the president by stating his case, which in substance was as follows: In his mouth was an inferior incisor which needed filling. He called on a city dentist, who, judging from the doctor's remarks, was a gentleman of intelligence and of excellent professional record, in order that he might receive the needed attention. In preparing the cavity for a filling the dentine was so exquisitely sensitive that little progress could be made, so in order to render the operation endurable, a small quantity of a four per cent. solution of muriate of cocaine was applied to the cavity on a pellet of cotton. This, the doctor "imagined," slightly modified the pain for the instant, but as the operation of excavating was renewed the pain was as keen as ever, so more cocaine was applied, and this repeated at intervals five or six times, but with no marked effect as a pain obtunder. The rubber dam was finally adjusted and the cavity filled with gold, but the gold was not securely anchored, so it became dislodged by the instrument used in trimming away the surplus material around the cavity margin. The tooth was then filled with oxy-phosphate of zinc. No special trouble was experienced until next morning, when the doctor had a feeling of numbness on that side of his face, and had considerable difficulty in swallowing his breakfast. His right arm also became benumbed, suggesting something akin to paralysis. This condition continued two days, then gradually got better, but it was several weeks before he was quite well again.

From the Doctor's remarks it did not seem clear to some of the audience whether or not the pulp was exposed when the cocaine was

applied. The Doctor did not seem positive, but he thought it "not quite, but nearly exposed." Dr. Hoyt was asked if he had any theory that would explain his condition, or if he believed it due to the action of cocaine applied to his tooth? In reply the Doctor said that the intense pain he suffered during the operation may have affected the nerves of his face, and the application of cocaine may have had a specific action on the nerve in the tooth which also affected the facial nerves—or that the operation and the cocaine together had done the business.

Although cocaine has been employed within the past two years in thousands upon thousands of instances by oculists, dentists, surgeons and physicians in general practice in this and other countries, and has also been dispensed by druggists in all communities for various troubles of a painful character, very few cases have been reported where its use is supposed to have produced serious ill effects, and even in the few cases reported the diagnosis of each has been exceedingly vague and unsatisfactory. Cocaine has been dropped into the eye in innumerable instances for operations on that organ. It has found its way into the nares and in every part of the oral cavity. It has played an active part in the removal of tumors, and for dressing burns and wounds of every character has done great service. In cases of neuralgia it has been applied in form of a lotion, also injected hypodermically. It has been largely used as a tonic, and in countries where the coca leaves are produced the natives have for many years been in the habit of chewing them, or imbibing a decoction made therefrom. And yet what agent of like potency, so freely used, has been the cause of less mortality? Indeed, have any well authenticated cases of death by "coca poisoning" been reported?

In our specialty the use of cocaine is considerably limited, as it affects only soft tissue. Applied to sensitive dentine it is valueless, and to inject hypodermically with a view to render dental operations less painful is a practice of doubtful expediency. It, however, has its place as a local anæsthetic, and is valuable for certain purposes, and therefore should not be too hastily condemned, or unreasonably so. That it may prove an agent of mischief if used indiscriminately can hardly be denied, and due caution is requisite in the employment of not only this, but all drugs possessing such marked characteristics.

IRREGULARITIES OF THE TEETH AND THEIR TREATMENT.

BY F. E. HOWARD, M. D. S., BUFFALO, N. Y.

READ BEFORE A UNION MEETING OF THE SEVENTH AND EIGHTH DISTRICT DENTAL SOCIETIES OF THE STATE OF NEW YORK.

It would be impossible to include all that might be said on this subject in one paper of this kind, or even in a volume. We can only touch upon certain prominent points in the treatment of general cases presented, and the ingenuity of the practitioner must be exercised in carrying out in detail the minor points that have to be observed. No infallible rule can be laid down whereby we can accomplish definite movements of the teeth in a given direction. Judgment, ingenuity, and skill must be exercised. We are thus often taxed to our utmost in accomplishing our desires.

Among the most frequent cases presented are those demanding the bringing down of canines to their proper position, the irregularity being caused by lack of room. This usually requires the extraction of a tooth on either side to accomplish the object, and it must be left to the judgment of the operator which of these shall be selected. It may be the first molar, first or second bicuspid. If one or more of these teeth are extensively decayed, and the others are comparatively sound, it is better to take the weaker ones out, even at the expense of appearance, for it is our duty to accomplish that which is most likely to give the greatest promise of usefulness, as well as comeliness, for the greatest length of time.

Our work as dentists should not be of a temporary character in this field; we must look ahead many years, and weigh carefully in the scales of justice and right that which we believe will be for the greatest benefit to the patients intrusted to our care.

Another very important consideration in this work is to simplify the operation as much as possible. We should not keep young subjects in our hands for months, when by simplifying the operation as many weeks would suffice to accomplish results that are practically as good—where the difference in results would only be noticed by a dentist. Very slight deviation from a normal position does not warrant interference in all cases, particularly in boys' mouths. I have seen cases where the first bicuspid occupied the position of

the canine, a strong, well articulated tooth, and the canine pointing out between the first bicuspid and lateral, or the first and second bicuspid. Perhaps, in the majority of cases, we would be warranted in removing the bicuspid and pulling the canine down to place; at other times the extraction of the canine and the cutting off of the inner cusp of the bicuspid and converting it into a canine would be far better. By properly cutting the inner cusp from time to time, a slight elongation will take place that will give it a very natural appearance.

There are also cases where the canine occupies nearly the place of the lateral incisor, and the lateral assumes a very ugly position, being very prominent or depressed, and an attempted change in the position might be doubtful of success. A deviation from nature's arrangement is not always so deplorable as one might imagine. The shaping of the teeth will often cause them to lose their identity in the original type. This can be accomplished by very simple methods, when other changes might involve long, tedious, and complicated operations, with but very slight chances for permanent success. If parents are willing to incur the expense of complicated movements, and the patient is also desirous of obtaining the most perfect results in all the little details, almost anything can be done in this direction.

When we have a narrow arch and desire to expand one or both jaws, I have found the Coffin spring plate the best for general use. The adjustment of a plate of this kind to the upper jaw will also expand the lower by the force of occlusion. The action may be confined to one or both jaws at the will of the dentist, in the construction and adjustment of the plate.

A modification of the Coffin spring will be useful in many different ways; for instance, if the arch is to be expanded in the main, a spring bent in the general form of a W is arranged in position about midway of the plate, and when vulcanized the plate is sawed through the centre, the spring slightly opened and the plate placed in position. From time to time this is spread as the case requires.

When the anterior portion of the arch alone is to be spread, a hinge made of two eyes and a bar, joined and vulcanized into the posterior portion of the plate will hold the posterior part, while the spring will act upon the anterior part alone; or this may be reversed

and the back teeth spread at the will of the operator, as the case may require.

Instead of a hinge a more simple method will sometimes answer as well. Drill two holes in the back part of the plate, and with a strong silk ligature or platinum wire bind the parts together, and this will hold them from spreading at this point.

A piano-wire spring, vulcanized into the plate, is also very effectual for moving a tooth out when it is inclined in the mouth and it is not desirable to use a jackscrew. For the movement of canines and bicuspid, a band of platinum with a projecting top or knob cemented to the tooth, is admirable to retain the rubber or silk ligature in position, and to draw the tooth in its proper course, the ligature being attached to some point on the plate, or to a hook attached to some tooth not likely to change position by the force exerted.

For the rotary movement of a tooth, a band of platinum with an arm attached and cemented to the tooth is a powerful agent for twisting such a tooth into position. Also a good and simple method for this movement, as applied to the four anterior teeth, is accomplished by tying a waxed silk thread to any of them, taking two or three turns around the tooth and attaching to a rubber ligature fastened at some convenient point in the plate. The force exerted is in a direction to unwind the ligature from the tooth, and thus it is turned in its socket.

When any one of the six anterior teeth is crowded into the arch, and the space is partly closed so as to prevent the passage of such a tooth out to position, an excellent method is to construct a Coffin spring plate for the expansion of the arch, and while the jaw is being expanded the tooth is forced out with a jackscrew, when the teeth are allowed to return to their original position.

A common class of irregularities of teeth is when one or more of the upper teeth shut upon the lingual surface of the under ones. These I find ordinarily best controlled by making a plate that embraces both jaw and teeth, keeping the teeth partly separated. A band of vulcanite is allowed to extend along the labial surface of the teeth, reaching well up. In this band, opposite the depressed teeth, slots are cut for the retention of elastic bands, and when in position they are looped over the teeth, and the force exerted is in a direction to carry them out to their proper place.

A gold or platinum band vulcanized into the plate, extending around in front of the teeth, will accomplish the same object. When once they have passed over sufficiently far, the plate is to be cut away from the grinding surface of the teeth from time to time, then the occluding force much assists in the work.

In making radical changes in the position of teeth, more or less inflammation will ensue, and often portions of the gum will protrude between the plate and teeth. This must be reduced, from time to time, as the plate or appliance is removed. Aconite and iodine (equal parts) will relieve the inflammation, and a chromic acid solution will dispose of the hypertrophy. If it be quite prominent, excise this portion and apply the chromic acid, which will cause it to quickly assume a normal aspect.

Protrusion of the lower jaw can ordinarily be corrected in young subjects easily by making a chin cap or pan of brass, swaged to fit the chin, with two eye loops about two inches apart on either side. These are attached to a cap worn upon the head by strong rubber bands running above and below the ear. The upper bands mainly hold the apparatus in position, while the lower ones principally do the work of carrying the jaw back.

When there is excessive development in the tooth, it may be advisable to extract one or more on either side, and carry the anterior ones back, by the usual methods. The circumstances in the case will entirely govern the operation.

Reports of Society Meetings.

ILLINOIS STATE DENTAL SOCIETY.

REPORTED EXPRESSLY FOR THE INDEPENDENT PRACTITIONER.

Continued from page 318.

THURSDAY MORNING'S SESSION.

It was moved that at the next meeting the committee on Dental Art and Mechanism be instructed to secure a convenient room to be especially devoted to the exhibition of new appliances and materials, and that exhibitors shall be permitted to explain and demonstrate their inventions only in this room, between the sessions.

Dr. Black was called upon for his report, and said: You have all seen the results of these growths, in the formation of acids. I take the broth, which at the time of infection was neutral, and in a short time I find it acid, and the degree of acidity is in direct proportion to the growth of the vegetable organisms. And now arises a question in physiology. Where does this acid come from? It is the result of the life that gives us organic chemistry. The elements of the globe tend to the formation of permanent compounds. Without the intervention of some outside force there would be no change in nature. All would be at a stand-still. But the different forms of force are ever active; the sun, light, heat, winds, floods, etc., are constantly engaged in disrupting and intermingling the elements, and all tend to a disturbance of atoms and their remoleculation. These are some of the physical forces that assist in the changes of matter. The other force that is active in this work is life force, and this of itself is sufficient, assisted by such natural forces as are essential, to remodel all of organic nature.

It should be remembered that all Life is one, throughout the whole creation. Digestion in the vegetable world does not materially differ from that of animals. The lower forms of conscious existence have essentially the same general structure with man, and their life is one with ours. Food, pabulum, is taken into some form of a stomach, and it there meets with a digestive fluid which dissolves and fits it for assimilation, and it is finally woven into tissue, which becomes in time effete and is cast out as urea. Every form of life has within it the power of molecular changes and reorganization. The atoms are arranged and rearranged around a common center, first as tissue, and again as waste products. The *Torula*, or yeast plant, reorganizes pabulum, with the consequent formation of alcohol and carbonic acid. In the human digestive tract the fungi form peptones, and convert starches into glucose and levulose, and finally, by some mysterious process, produce lactic acid, as has been abundantly proved by Dr. Miller.

In the larger world we have poisonous plants, and those which possess medicinal properties, while others are inert. So with the fungi of the mouth; some produce one thing, some another. We do not know the physiology of the most of them. Although we have studied a part, there yet remains a great field for research. We know comparatively little of the conditions under which these

fungi are formed. They seem to present widely different phenomena. In one mouth they grow and produce a great deal of acid, while in another their growth is very slow. Under certain circumstances these micro-organisms attenuate, or lose their virulence, as Pasteur has demonstrated. Perhaps, when we sufficiently comprehend their growth, we may be able to attenuate them out of existence. We find that some organisms grow freely in beef-broth, while others demand the presence of peptones. In some, the animal body is their natural habitat, while others perish when introduced into a living organism.

It is not necessary that I should narrate all the various media employed for their growth, but I may describe one of the most common. Take a pound of beef, place it in a vessel and bruise it thoroughly. It is then boiled for an hour or two, till the fluid, which has been added, clears up. This broth will usually be found acid, and though some forms will grow in it freely, for others it is essential to carefully neutralize it. This may be done with carbonate of soda. The sugar, or whatever is demanded by the organism, is added. If pepsine is necessary it is added, and time given it in which to work. To sterilize it you should boil it for an hour, when everything will be devitalized, except a few forms like *penicilium glaucum*, which are not destroyed by a boiling temperature. It is not necessary to exclude the air. It is exceedingly hard to eradicate the idea that air of itself causes decomposition, but it is not so. Air will not infect, if the germs which it contains are excluded. The culture tubes are prepared by first stopping them with cotton plugs, to filter out the floating germs. They are then placed in an oven and heated till the cotton is changed to a brown color, showing the beginning of the charring process, and this is my index of complete sterilization. The hot broth is now poured into the sterilized tubes, and they are, when cooled, ready for infection.

During the cooling, and in the handling, some of the tubes will become infected by stray germs which obtain entrance. To determine this the tubes are placed in the incubator for a time, to see if any germs spring up. When they are found free from intrusive organisms, they are duly infected. This infection is accomplished by dipping a platinum wire, which has previously been heated to redness, into the infectious mass, and carefully carrying a minute drop to the culture tube. I show you one that was thus infected

yesterday. You will see that the growth is very weak and slow, the tubes showing but a very little cloudiness. Here is another in which the growth of caries fungi is very rank. This other tube, that I show you, was some of the same beef broth, duly sterilized, and which has remained in the incubator uninfected, as a control. The control tube, you will see, as I take from it a drop on the previously heated platinum wire and touch it to both red and blue litmus, is quite neutral, while this other infected tube, you see by its action, is strongly acid. The tube in which was the weak growth, you will observe by this other test, is but slightly acid.

Robertson, in 1835, said that caries was produced by fermentation, but he did not comprehend the principle of the process. We have all believed that caries was some kind of a chemical process. Dr. Watt declared this, but he thought the acids were produced by another process, and believed them to be inorganic in their nature. That much he affirmed through following Liebig. The germ theory is not a new one, but the knowledge of the manner in which chemical processes are brought about is modern. We had long been searching for the origin of the acids which are found in the mouth. We now know that when many of these mouth fungi are grown in the proper medium, they produce an acid which dissolves the lime salts. As the fungi would not proliferate in an acid medium, they would be self-limiting, were it not that the medium is again rendered neutral by the uniting of the acid with tooth bone, which allows the organisms to penetrate further, and again carry on their destructive work. They grow as vines would grow in a lattice work, the acid preceding them continually. Some species produce a gelatine, which acts as a protection. They crowd and dilate the dental tubules, and it was this appearance which Tomes saw, and pronounced a zone of resistance. Leber and Rottenstein carried on the work of observation, and made important additions to our knowledge. Milles and Underwood did excellent work, but they failed to study the physiology of the fungi. Miller did this, and he first triumphantly demonstrated the products of the organisms, and this, you will allow me to say, was the most perfect work of the kind that the world ever saw. His observations were so scientifically conducted, and the product so carefully analyzed, that he left not a hook upon which a tenable objection could be hung.

These acids are formed in the mouth and act upon the teeth while in their formative state, and we know that chemical combinations are most powerful in a nascent condition. If a man fails to eliminate the effete matter, he is poisoned by it, and this is true through all nature. So, if the acids of these organisms be not neutralized, they are suffocated in their own excrement, or product. Here is a tube in which I have neutralized the acid, and thus eliminated the waste products. This I continued to do until, as you see, the tube is almost full of gelatine. Had I not accidentally permitted the intrusion of another fungus, which destroyed the culture, I could have filled the tube. To neutralize the acid I made a lactate, using lime, and obtaining the lactate of lime, which is neutral and will not embarrass the fungus. When sugar was not added to this culture the fungus did not grow, for it did not find the proper nutriment. It must have sugar, or starch, which can be converted into sugar, for its nutriment. It will be observed, then, that even though all the fungi be not removed from a tooth cavity, if it be sealed up hermetically they will be starved to death, as grass would die from lack of nutriment and moisture. But the spores of these organisms will live for a very long time, even if deprived of nourishment, though they will not grow.

Dr. Taylor—What is the best germicide to use for the destruction of these organisms?

Dr. Black—I do not know. There are many things which I have not yet found out. It is not always caries fungi that form acids. We find many forms under artificial plates, and these produce acids, and that accounts for the way in which teeth that have clasps around them are sometimes girdled. It also explains why mouths may become sore under plates that are not perfectly cleansed.

Dr. Ames—Does sterilization require a boiling heat?

Dr. Black—I would not like to risk anything less. I am in the habit of adding salt to raise the boiling point. Some fungi are destroyed at lower temperatures, but some are not killed at even the boiling point of water. Pathogenic organisms are, however, all destroyed by an hour's boiling. *Penicilium*, and a few other inert ones, will withstand that.

Dr. Brophy—Do you not differentiate between ferments of the stomach and the fungus ferments?

Dr. Black—Yes. There is a wide difference between the organic

and inorganic ferments. The *Enzyme* convert starch into glucose and levulose, and then the process ceases. They will convert flesh into peptones, but they will not carry the conversion further. The ferments proper, the organic ferments, induce a growing which repeats itself. They produce a remolecularization into their own tissue, and this into waste products. This process repeats itself indefinitely, so that if the proper pabulum be provided, it is endless. Between organic fermentation and putrefaction no line can be drawn.

Dr. Koch—Suppose you were to plant together different forms of the cocci; will they hybridize?

Dr. Black—I cannot tell, but I have often had different forms growing together, and they always have kept separate and distinct.

The Supervisor of Clinics, Dr. Frank H. Gardiner, of Chicago, made his report. A number of different operations in surgical, operative and mechanical dentistry had been made the day before, and the results were faithfully and fearlessly reported. Clinical exhibitions are not of as much benefit as they might be, because the failures and deficiencies in the operations are seldom pointed out, and hence young operators are led to accept as models for their future guidance methods and manipulations which really are not commendable. Operators at clinics usually work at a great disadvantage, and are obliged to resort to make-shifts to supply needed appliances, but even though great ingenuity may be displayed in accomplishing their work, the results should not be applauded or accepted as models unless they are perfect.

The report gave the names of the operators, but as some of them were severely criticised, they will not be repeated here.

Examinations of the clinical operations for the year before were made, and the condition reported. That this may be practicable, it is usual to select members of the society for patients. The operations of three of the clinical demonstrators of 1885 were found in good condition. One, performed according to the Herbst method, had proved a complete failure. There was considerable leakage at the cervical margin, and the filling was so poorly consolidated that it was half out. The operator subsequently explained that this was the result of his own inexperience, and not the fault of the system.

In the clinics of 1886, one operator filled the posterior masticating surface of the second bicuspid, using Perry's separators and

Brophy's matrix. The principal criticism was on the preparation of the cavity, which was declared to be improper.

Another operation of filling a posterior cavity by the aid of Dr. Call's matrix was pronounced a partial failure, owing to an insufficiency of space. Had more space been gained there would have been room enough to perform a better operation.

A gold crown was placed upon a second bicuspid. This was pronounced an imperfect operation, the palatine edge of the crown not reaching and covering the edge of the root, the occlusion being bad and the setting faulty. The tooth should have been filled instead of crowned. Another operation was that of filling a mesial cavity in a right superior cuspid, and the distal surface of the lateral incisor, the object being to demonstrate the practicability of filling teeth without previously gaining space. The operation was pronounced imperfect, because the teeth were cut away too much, and a permanent unsightly space left.

The mechanical clinics were reported as successful. The report recommended that operators should provide themselves with all the instruments necessary, that they might not be embarrassed through their absence, and thus be unable to do as good work as that of which they were capable. "Operators," said Dr. Gardiner, "should present good work, and not excuses."

OPERATIVE DENTISTRY.

This had been assigned as one of the special subjects for consideration at this session. A paper was read by Dr. C. R. Taylor, upon "The Preparation of Pulp Canals and Cavities for Filling."

Dr. Davis—No vocation demands a greater degree of honesty than does ours, for in no calling is it more easy to deceive those who demand services. A canal can readily be stuffed in an imperfect manner, and it may be some time before the poor work will be discovered. If it were the habit of all dentists to make the fee dependent upon the time spent, there would not be the temptation to hurry an operation at the expense of its thoroughness. To properly fill or treat a pulp-canal we must gain a perfect entrance that shall be in a line with the axis of the tooth. Enlargement of the canal is not necessary for treatment, and if liquid gutta-percha be used it is not essential for the filling. The rubber dam should be applied in all operations upon the pulp-chamber and canals of teeth, for

obvious reasons. A great variety of instruments is not demanded, and the engine should be used as sparingly as possible. When it is employed, the burs used, as well as all other instruments, should be sharp and in perfect order. The operator should be fearless in cutting any overhanging dentine, and thoroughly painstaking in his cleansing.

Dr. Hanaford—I have been struck with the absence in our late literature of anything upon the capping of pulps. It is not long since this occupied attention, almost to the exclusion of other things. We now seem to have gone to the other extreme, and to be progressing backward. In a report published in *The Southern Dental Journal*, I saw something like this: "In the near future we shall find that the capping of pulps has been relegated to those who do not attend society meetings. The effects of this practice will be found in discharging abscesses, in blackened teeth, and in filthy mouths." I do not agree with this, but I believe that the capping of pulps that are unfit for it is but too common. It is better to extirpate at once, than to leave the pulp to die by stages.

For filling roots, plastic materials are now almost universally employed, and although there may be some inconvenience in using them in teeth with open foramens, there is little doubt that they are better than metallic fillings.

Crown work is becoming more popular each year. Too much has been said of the construction of crowns, and not enough about the preparation of the root. It requires shaping to a definite form, and corundum wheels and files are not sufficient for this work, as the roots are conical. Unless this form is materially changed the band is not in contact with the tooth at its distal edge, and it acts as a continual irritant. The root should be of the proper shape and the band then carefully fitted. It should be tried on, and the interior then wiped out carefully. If now there be a leakage, the band should be removed and made smaller.

We hear nothing now about permanent separation of the teeth. That is another topic which once absorbed great attention, but which is now fallen into desuetude. It is another instance of one extreme following another. Flat fillings, with a permanent separation, are usually protective of the tooth. If contour operations are to be made, there should first be secured abundant separation, or the work will be short lived.

Dr. K. B. Davis—I object to the making of retaining pits for starting a filling in bicuspidis if there be a living pulp. There is no necessity for it. If the filling be commenced with soft foil, it will obviate the necessity for retaining pits. I object to the use of the mallet in beginning operations. I believe that many frail margins are in this way permanently injured. Soft foil should be employed until the cavity is half or two-thirds full.

Dr. McKellops—What holds the pieces together while you are inserting the filling, if there be no retaining points and soft foil is used?

Dr. Davis—They are wedged together, and sometimes held by contact with the next tooth.

I object to the extraction of second bicuspidis for regulating purposes. The instances are rare in which it is necessary to sacrifice a tooth.

Many fillings fail because of the neglect properly to finish at the cervical margin. I have seen gold fillings that projected a line at the margin of the gums, where was formed the nucleus of decay. Yesterday I had a tooth filled for the first time in fifteen years. It would be better for us if we could occasionally have a tooth filled, that we might remain in an active state of sympathy with our patients.

Dr. Sitherwood—Nearly every dentist fills roots of teeth with plastic materials. I have frequently forced gutta-percha into teeth that were abscessed until it came out of the fistulous opening. When there is any caries of the bone attending dead roots, it is very difficult to keep the canals dry. In such cases I would fill as quickly as possible, and treat the caries afterward. For periostitis succeeding the filling of root canals, there is nothing so effectual as Dr. Darby's Capsicum Plasters.

Dr. Ottofy—In the preparation of cavities for filling, the final examination should always be under a magnifying glass, to detect minute imperfections. I seldom cap an exposed pulp for a person more than thirty years of age. Good results cannot be confidently anticipated except in young people. If there shall have been much pain preceding the excavation, I seldom attempt capping.

Dr. Solomon—Believes in contour work, and by means of diagrams on the board he illustrated the principles involved. Flat fillings are uncomfortable in use, while the usefulness of a tooth is lost

in proportion to the amount of its masticating surface that is removed.

Dr. McKellops—Asked about teeth that were deprived of periosteum. He referred to the alleged practice of Dr. Younger, who bores holes in the jaw and inserts teeth in them. He also referred to a case in which Dr. Morrison had extracted a tooth from one locality in the jaw and inserted it in an artificial cavity in another place.

Dr. Barrett—Said that if any miracles were to be performed he should look for their accomplishment in St. Louis, and the man there who could reverse the processes of nature, if anyone could, would be Dr. Morrison. He had heard of the case referred to by Dr. McKellops, and was assured by credible dentists that what most people would think but an apochryphal story, was a veritable fact. He could not conceive of the possibility of the existence of bone without its periosteum, nor of tooth without its pericementum. Nor could he comprehend how pericementum would proliferate in a gimlet-hole. But Dr. McKellops had thrown a new light upon the Morrison case by admitting that the tooth was inserted in what was a previous tooth-socket.

He detailed his method of obtaining an impression of a root of a tooth by using rolled copper wrapped about the end of the root, a cast being then taken with plaster of paris which filled the copper ferrule; then by wrapping more copper about the removed end and pouring melted tin into it, a perfect model of the end of the root was obtained.

In the filling of the roots of teeth there is a principle involved. There is but one tissue that needs protection, and that is the dentine. The cementum is otherwise nourished, while the enamel practically needs no nutrition. If a septic canal be made aseptic, and any opportunity for the entrances of septic organism be effectually stopped, it must remain aseptic. But there may be an exudation into an open pulp chamber, and hence it is safest to stop this entirely. For this purpose we need a plastic material, that it may fill all the inequalities of the pulp canal; a non-conductor that thermal changes may be avoided; a bland material that it may be as innocuous as possible. We do not wish a filling that has any medicinal qualities whatever, because we are now supposed to be through with medicaments, and the cavity to be entirely aseptic. It must be a simple material, and not a chemical compound, as the

latter would be more likely to disintegrate. These qualities are only found in the hydro-carbon gums, notably, gutta-percha, and hence that was the ideal filling for roots of teeth.

Dr. Matteson—To shape the roots of teeth preparatory to crowning, I use corundum disks of different sizes.

Dr. McKellops—That is easier said than done. In putting on crowns, I fit the band while the patient is in the chair, and dress the roots with a file that cuts towards the crown. For a gold crown I make the band of less width than the length of the crown demands. The crown part of the tooth is then made so that the band will telescope within it. They are then placed in the mouth and the bite adjusted, when they are removed and soldered together. For separating teeth I use waxed tape. I take plenty of time, and do not fill until the soreness of separation is gone. I have seen the whole socket and septums surrounding a tooth slough away because of too rapid wedging. I employ any device that I think will assist me, but am not wedded to any particular method. For impacting fillings, I use a Bonwill mallet, and contend that there is nothing so effectual. But I have modified the instrument.

Further discussion was, by vote, postponed till another session.

Dr. Moody—Offered a series of resolutions commending the course of Dr. Harlan as a member of the Board of Dental Examiners, and requesting the Governor to re-appoint him.

(TO BE CONTINUED.)

NEW YORK ODONTOLOGICAL SOCIETY.

REPORTED EXPRESSLY FOR THE INDEPENDENT PRACTITIONER.

This society held its last meeting of the season in the parlors of the Academy of Medicine, Tuesday evening, June 8th, President Bogue in the chair.

Dr. N. W. Kingsley, with a drawing on the blackboard, described a prosthetic appliance devised and made by Dr. A. Rosenthal, of Liege, Belgium. The patient for whom the appliance was constructed had lost a number of teeth on opposite sides of each jaw, in consequence of which the lower jaw had become turned or drawn by the muscles greatly to one side, thus interfering with, or making

mastication difficult, and presenting an exceedingly ugly appearance. To correct this, a band was made to fit around a number of the upper teeth and held firmly in position by screws. To the band was attached a rod directed downward. A similar band was prepared and attached to the lower teeth, with a small tube pointing upward. The jaw was brought into position, and with the appliance adjusted the rod from the upper band played up and down in the tube of the lower as the mouth opened and shut, still retaining the position. In this way mastication could be fairly well performed, though it was impossible to obtain lateral movement.

Dr. Davenport, the Secretary, read a paper prepared and sent by Dr. Wm. Herbert Rollins, of Boston, entitled "Regular Examination of the Saliva." In this the doctor called attention to the benefits secured by watching the condition of the saliva, which often changed with the varying conditions of the system. When strongly alkaline in character, beneficial results might be obtained by acid treatment, or when found of a decidedly acid nature the reverse treatment was called for.

For examining and testing the saliva, prepared litmus paper was now offered at the dental depots, thus enabling every dentist to readily ascertain the condition of the saliva in each case presented.

Dr. Geo. W. Weld, read an exceedingly interesting paper on "The Destructive Energy of Tincture Chloride of Iron on the Teeth." The doctor had performed a series of experiments for the purpose of ascertaining the effect of various acids upon lime, and presented to the society a handsomely framed card containing specimens of teeth which had been subjected to iron and acid preparations, such as physicians commonly prescribe. Dr. Weld also passed around the room, for the inspection of the members present, trade bottles of acid phosphates of iron in common use. He had submerged teeth in these different preparations, and in several of them the enamel was much eroded, and the entire dentinal structure presented the appearance of having been baked. Teeth subjected to the phospho-muriate of quinine preparations, though containing phosphoric acid, iron and strychnine with the quinine, were not affected by them, and this Dr. Weld attributed to the fact that the preparation was in the form of *syrup*, and so he considered it safer to administer iron in syrup.

It was asked why the syrup should prevent deleterious action, but

the doctor could only suggest that the teeth possibly were better covered or protected by the syrup, which prevented the acid or iron from acting on them. Dr. Weld thought much injury was done to the teeth by physicians, who prescribed improperly prepared iron and acid medicines.

An elaborate chart was exhibited showing the different preparations of iron and their compounds; also preparations of phosphates, phosphites, and hypo-phosphites.

A vote of thanks was tendered by the society to Dr. Weld, for the great care he had given to, and the time expended on this important subject.

Editorial.

TO JUNIOR DENTISTS. No. VI.

THE PREPARATION OF CAVITIES FOR FILLING.

Dear Doctor :

Since my return from the excursion on which I made the visit to your office and witnessed the operation which you requested me to criticise freely and fully, I have been considering the propriety of doing so, and have finally concluded to take the risk. It is usually a very hazardous thing to undertake to point out the faults of a friend. Do you remember the story of Gil Blas and the Archbishop? You will, perhaps, remember that Gil Blas was engaged as secretary by the latter, under the strictest injunction to inform his master if, in the progress of age, he began to detect any gradual weakening of the intellectual powers, "for," said the Archbishop, "I do not wish to detract from my fame by lingering in the pulpit when my powers of reasoning shall have failed." In the course of time, when the ecclesiastic had for a long period exhibited his senility to every one, Gil Blas ventured on hinting to him that it was time that he retired, and was instantly dismissed, with the intimation that it was his own judgment that was lacking, and that the Archbishop was fully satisfied that his mental powers were never so vigorous. Yet despite such warnings, I now propose to point out as plainly as I can the defects that I saw in your operation. I could not do this at the time, because I would not let your patient know that the fillings were imperfect.

As I look back down the vista of the years that are gone, and call to mind the time when I too was a young dentist, I remember with what complacency I contemplated my early operations. I had not sufficient experience at that time, and was too little of an operator to be able to see the faults that existed. Like most young graduates, I was entirely convinced of my own great abilities, and felt that it was my mission to lift operative dentistry to a higher plane. I affected to despise the mechanical branch of my business, though I worked diligently enough at it when I had any of it to do, for it was upon that I was chiefly dependent for bread and butter. I inserted fillings and spent hours in polishing them up, in burnishing the surface and admiring the shining gold. You can imagine my consternation and horror when some of those very fillings came to me shortly after, brought in the hand of the patient, and when about others I saw the fatal blue line that indicated failure. Well, I have spent many a sleepless hour, fairly blushing in the solitude of my chamber, in mortification and humbled pride at the miserable defects of that which I had regarded with so much complacency. It was a bitter thing to be convinced that I was not half so fine an operator as I had imagined myself, and instead of pursuing my triumphant course to be obliged to painfully retrace my steps and laboriously to search for the causes of my failures. I found some of them, and having rectified these, again began to plume myself upon my attainments, only again to be humbled by new failures, and once more to creep painfully back to the beginning in search of the source of my humiliation. And this has been about the history of my professional life, and there is little doubt that it will be yours. You may make less mistakes than I have made, but when you arrive at middle life there will be, if you are the honest man that I think you are, little comfort in looking back over much of your professional life. Your chief satisfaction will be that, despite your stumblings, you have yet made steady progress.

When I intimate that the fillings that you inserted with so much pride, while I was visiting you, will prove failures within a comparatively brief time, you will be shocked, and perhaps indignant. Wait for ten or fifteen years, and it will not then seem to you such a matter of surprise that you should be thought capable of errors. You will have lost one-half of your conceit, but you will have gained in solid judgment.

You remember that the operation was the filling of cavities in the distal approximal surface of a central, and the adjoining surface of the lateral incisor. I doubt very much whether, in the preparation of the cavities, you paid the remotest attention to the structure, character and contour of the teeth themselves, and yet not unfrequently this should have much to do in guiding your course. The patient was a young lady, with teeth of a bluish-white color, the enamel very thin and as fragile as glass. Now that meant that the edges should be most carefully protected. A filling, simply flush with the margins, is not enough in such cases. More is required. Such an operation demands plenty of space. Highly polished gold, very conspicuously displayed in such teeth, is extremely offensive to every person of taste. What was your method of procedure?

In the first place, you had gained no space in advance of the operation. You depended upon rapid wedging, and when you came to try this you found, as you should have anticipated, that in such a mouth, with such a patient, one who had fully reached maturity and whose osseous tissues gave every evidence of firmness and fineness and closeness of texture, it was impossible to gain sufficient room for the kind of operation demanded. Then, instead of dismissing her with a wedge between the teeth until you could correct the first blunder, you proceeded to operate with the odds against you. That, my boy, was your second error. I fear that you will make many failures before you learn this important lesson:

No man who does first-class work will commence until he is master of the field and can control all the environments.

You made another mistake at the outset. You commenced your operation without first putting on the rubber dam. As a consequence, your wedges had mostly to be withdrawn before you could begin the filling. You did most of the excavating when the cavity was flooded with moisture, and when it was impossible to see precisely what you were doing. Besides, you subjected your patient to unnecessary pain.

No good dentist is forgetful of the comparative comfort of his patient.

Before you had finished the excavation of the central you found that you had not entire command of the case, for you had undermined the anterior wall of the cavity to such an extent that it would have been impossible to perfectly fill it had it not crumbled

away. You had previously chiseled it out freely, to get the room that should have been gained by preliminary wedging, and you now had a yawning chasm, with no front wall. You then inserted a bur in the engine, and proceeded to gain anchorage beneath the enamel above and below the cavity. I knew what would be the consequence when I saw you put in that large and sharp bur. You undermined more of the glassy enamel, and fractured it, thus increasing the size of the already too large cavity. There was no decay to be removed at that point, and you needed but a minim bur, that your anchorage might be in the dentine. Better yet would it have been, had you employed only an excavator. You did not consider the character of the tooth that you were at work upon. Then, too, your attention was distracted by your attempts to hold conversation with me, and by constant directions to your office boy concerning something that was going on in the laboratory.

No man can do two things at once. To perfectly fill a bad cavity demands all the resources of both mind and body.

Finally, when you had finished the excavation of the central, you had a cavity that was fully twice as large as it should have been, for much of sound tooth structure had been unnecessarily sacrificed. Had you been at work on a tooth of a different character, there might have been danger of insufficient excavation, but with such a tooth as the one that you were then to operate upon, the danger was from too much cutting away.

I watched you keenly, to see if you had learned anything in the excavation of the first tooth. I will do you the justice to say that you had one thing impressed upon your mind, and that was to be careful in undermining those fragile walls. But it led you to a fault in the other direction. You were now at work upon a smaller tooth than the central, yet the cavity was quite as large. What should have been the inference? That greater care was required in the excavation, because the distance to the pulp was considerably less. Yet you repeated the error of the previous cavity by inserting the same engine bur, which was too large for even the central. To avoid the crumbling which succeeded a too near approach to the thin enamel, you buried the bur in the dentine, and I was momentarily expecting to see you cut some filament of the pulp, and thus have another difficulty to contend with. You may thank your

lucky stars that the patient was not a few years younger, or that the pulps lay unusually deep in her teeth.

The judicious operator, while avoiding one extreme, is careful not to go to the other.

You succeeded in finishing the excavation of this cavity without wounding the pulp, and without inducing such extensive crumbling of the enamel as in the first tooth. But your anchorage was too deep. Indeed, you burred so near the cutting edge of the tooth in your anxiety to make a sure thing of it, that the breaking off of the point thus weakened is only a question of time. Then what will you do with such a fragile tooth as is that one? When you finally placed the rubber dam in position, I was in a maze of wonderment to know if you called the excavating and preparation of the cavity finished. You certainly did, for immediately upon drying the cavity you began to insert the gold. And now let me point out to you what the condition was. I have already called your attention to the thin, glassy, fragile character of the enamel. If you had examined it with a good magnifying glass you would have seen how rough and serrated were the edges. It was absolutely essential that these be made smooth, if a perfect filling was to be inserted. A fine stone should have been used to dress down these ragged margins, and fine emery strips should have polished them to a glossy smoothness, leaving the margin slightly beveled toward the exterior.

It is impossible to obtain perfect contact with a rough and craggy surface.

As it was, you proceeded to introduce your filling upon a series of sharp and easily fractured points. Under the blows of the mallet these must have crumbled, leaving a yet rougher and more imperfect edge, with the margin of the gold all exposed at innumerable minute points. The glassy edges, instead of being protected with an overlapping layer of gold carefully impacted, were left in that imperfect condition, to continue the process of disintegration. What is to be expected from such an operation but early failure, with consequent mortification to you and loss to the patient?

I was curious to see if you would take any measures to protect the pulp of the lateral from thermal changes, but you did not. I think that a temporary filling of gutta-percha or oxy-phosphate of

zinc should have been inserted, until the immediate danger of pulpitis should have passed away. I noticed that when at the completion of the operation you gave the young lady some water with which to rinse her mouth, she flinched very sensibly. I predict trouble there, if it has not already occurred.

A sensitive tissue, like the pulp of a tooth, may not be subjected to rude shocks, long continued, with impunity.

Then, too, you had not been sufficiently careful in leaving proper support for the anterior wall of enamel in the lateral. It was impossible to perfectly fill the deep undercut which you had made, and the enamel was unnecessarily weakened. Both of the fillings must prove failures, within a short time. There were faults in the insertion of the gold; but I do not propose now to advert to them. Indeed, I think I have said all that your friendship for me will bear. It is quite likely that you will feel indignant, and entertain the idea that I have purposely exaggerated the defects. If you will think it over candidly, however, you cannot but admit the probable justice of my strictures. Let it be a lesson to you to avoid these mistakes in the future.

No error is to be wholly deplored if it teaches us to avoid such faults in the future.

THE NIAGARA MEETING.

The present indications point to an unusually large meeting of the American Dental Association. Niagara was the birthplace of the Society, and it has always been a favorite point for the meetings. This year the natural attractions are greatly increased from the purchase by the State of the lands surrounding this wonderful cataract, and its conversion into a free park. The visitor can now go where he will, without having a demand made upon him for entrance money.

During the past winter a fine building has been erected for a hall and theatre, and this has been engaged for the meeting. All the hotels, except the Cataract House (which has been shorn of its principal attractions), have offered reduced rates to the delegates, and as there is room enough, it is expected that there will be a very large representation. It has been the habit of many to attend one or two days—long enough to be able to boast that they had been in attendance upon the National Meeting—and then

quietly to disappear. This is no way to obtain any of the benefits of the meeting. It requires constant attendance and a close watching of the proceedings to catch the spirit of the meeting, but to one who does this there is nothing which he will find so professionally profitable. There will be plenty of time for recreation between the sessions, and arrangements are being made by the local committee for excursions and rides to all the points of interest, at reduced rates.

There is no place in America that is so restful as Niagara. It is to be hoped that many will come a few days in advance, and thus be fully prepared for the meeting, and that more yet will stay for a time after the meeting has closed. The social interest of the occasion would be much enhanced if members would bring their wives and daughters with them. They often need rest and change quite as much as the head of the family. Bring them to Niagara this summer.

TO OUR SUBSCRIBERS.

The steady and rapid growth of the subscription list and the continued increase of the business interests of the *INDEPENDENT PRACTITIONER* make absolutely necessary certain changes in the business management. Heretofore, all of the financial affairs of the journal have been transacted at its New York office, while it was printed and mailed from the editorial office, in Buffalo. It has been found necessary to separate the subscription from the advertising department, and to engage a special clerk to look after the former exclusively. As mistakes have at times unavoidably occurred in the re-transmission of names for the mailing list, it has been thought best to remove the subscription office to Buffalo, and henceforth anything relating to that department, including new names, renewals, removals, and remittances on account of subscriptions, must be sent to that office. The advertising, and all other accounts, will still be kept at the New York office, but as the publishers are all in active practice, it has been found more than any one of them could do to look after both subscriptions and advertising. Remember, then, that henceforth all matters pertaining to subscriptions, as well as editorial communications, should be addressed to the editor, at No. 208 Franklin Street, Buffalo, N. Y.

PULPITIS.

Dr. Geo. Watt objects to the term *pulpitis* to indicate inflammation of the dental pulp. He says that according to the principles of etymology it has no right to exist, and that nothing analogous occurs in our language. Its use shows a want of classical education, and it has no similitude with *Gastritis* or *Stomatitis*.

We dislike to differ from so competent an etymologist, but cannot help thinking him mistaken. The term gastric is derived from the French *Gaster*, the stomach. It is not a classical term, and is somewhat obscure in its application, but it has been universally adopted in medicine as the technical term for the stomach. Hence we get "gastric juice," "gastric nerves," "gastric vessels," and *gastritis*, an inflammation of stomach tissues.

Stomatitis is a classical term. It is derived from the Greek, *Stoma*, a mouth, and the term *stomatitis*, referring to an inflammation of the tissues of the mouth, has no reference whatever to the stomach. Hence "stomachitis" would indicate a most glaring "want of classical education."

If "Pulpitis," indicating an inflammation of pulp tissues, has no analogue, what is to be said of the following terms, all well established in medical nomenclature :

Laryngitis, inflammation of the Larynx.

Iritis, inflammation of the Iris.

Vaginitis, inflammation of the Vagina.

Urethritis, inflammation of the Urethra.

Pleuritis, inflammation of the Pleura.

Meningitis, inflammation of the Meninges.

Cerebritis, inflammation of the Cerebrum.

Parotitis, inflammation of the Parotid.

Folliculitis, inflammation of the Follicles.

Prostatitis, inflammation of the Prostate.

Rectitis, inflammation of the Rectum.

Colitis, inflammation of the Colon.

Osteitis, inflammation of the Osseous Tissues.

Periostitis, inflammation of the Periosteum.

Phlebitis, inflammation of the Veins (Greek, *Phlebo*).

Tonsillitis, inflammation of the Tonsils.

Pneumonitis, inflammation of the Lungs (Greek, *Pneumon*).

Bronchitis, inflammation of the Bronchi.

Glottitis, inflammation of the Glottis.

Enteritis, inflammation of the Intestines (*Enteron*).

Duodenitis, inflammation of the Duodenum.

Peritonitis, inflammation of the Peritoneum.

Neuritis, inflammation of the Nerves (*Neuron*).

Nephritis, inflammation of the Kidney (*Nephros*).

Pyelitis, inflammation of the Pelvis of Kidney (*Pyelus*).

Arthritis, inflammation of the Joints (*Arthro*).

Carditis, inflammation of the Heart (*Cardia*).

Pericarditis, inflammation of the Pericardium.

Endocarditis, inflammation of the Endocardium.

Pancreatitis, inflammation of the Pancreas,

and many more that might be instanced, all words legitimately compounded of the names of the tissues with the termination "itis," which signifies an inflammation. The names of the tissues may be derived from the Greek, Latin, French, German or English. In either case the termination and the compounds have been approved and adopted in medical nomenclature, and hence the term "Pulpitis" to designate the inflammation of the tooth-pulp (Latin, *Pulpa*, a soft mass), is classical, scientific, legitimate and proper, and we think should be accepted and adopted as the correct technical term in dentistry.

THE ILLINOIS STATE DENTAL SOCIETY.

It is seldom that so much matter of vital import to dentistry is offered in such small compass as may be found in the remarks of Dr. Black, in the opening pages of the report in this number. There is no chance for misapprehension, for he is so clear and lucid in his statements, so comprehensive and yet so concise in language, that the wayfaring dentist, though a fool, may not err in comprehension. There has been so much of misunderstanding concerning the nature and action of bacteria in the mouth, that every one should carefully study these presentations. It is positively nauseating to hear the crude, mistaken interpretations of the latest teachings of science, that are sometimes enunciated in society meetings by otherwise intelligent men. There is no excuse for this ignorance when such clear presentations as those of Miller and Black are to be found in the journals.

Current News and Opinion.

AMERICAN DENTAL ASSOCIATION.

The twenty-sixth annual meeting of the American Dental Association will be held at Niagara Falls, commencing at 10 A. M., on Tuesday, Aug. 3, 1886.

GEO. H. CUSHING, Secretary.

The Committee of Arrangements had hoped to give full and definite information in the July number of journals in regard to all the details of the arrangements for the annual meeting of the Association, to be held at Niagara, August 3d. But as the railroad rates thus far secured have not been as satisfactory as the committee yet hope to secure and are working for, they will issue a circular later to all members of the Association, and to local societies as far as possible. Those who are not members of the Association and who wish the circular, will please drop a postal to the Chairman of the Committee to insure their getting it. The railroad rates as thus far secured on all leading lines are one and a third fare round trip, to be issued upon presentation of certificate. Definite information concerning this will be given in the circular if better terms and arrangements are not secured.

The hotel rates will be as follows : The International Hotel will receive dentists and their families at \$3.00 per day, the Cataract at \$4.00 per day, the Niagara, Prospect Park and Hotel 'Atlantique \$2.00 per day if rooms are applied for and secured in advance. The Park Theatre, adjoining the International Hotel, has been secured as a place of meeting. Do not be anxious about not receiving the circular; you will get it some time in July, but a few days' delay in issuing the circular may mean a good deal of money saved to those attending the Association. For instance, the arrangements were not completed and circular issued until latter part of July last year. A month earlier it would have been impossible to have gotten the low rates finally secured. Remember, we promise nothing better than we now publish, but will continue to work for more favorable terms.

All State and local societies which have adopted substantially the Code of Ethics of the American Dental Association, will remember that they are entitled to one delegate for every five members. Such delegates must have credentials signed by the President and Secretary of the society which they represent.

J. N. CROUSE, Chairman Com. of Arr.,
2231 Prairie Ave., Chicago.

NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

The annual meeting will be held at 11 A. M., on Monday, Aug. 2, 1886, at Niagara Falls. It is hoped all State Boards will be represented.

GEO. H. CUSHING, Secretary.

NOTES FROM THE WEEKLY MEDICAL REVIEW.

The *New York Medical Record* complains that the lines by Robert Burns :—
 “A chiel’s amang you takin’ notes, an’ faith he’ll prent it,” are misquoted by the *Review*. We submit that a physician has a right to treat Burns as the exigencies of the case requires.

A gentleman taking advantage of the nice weather planted some seeds, among which he noticed some strange ones. As all the seeds came up except the strange ones, he dug a few of them up and submitted them to us. On examination they proved to be a gelatine-coated cathartic pill. He will have to wait awhile before the rest will bloom.—*National Druggist*.

We have frequently planted gelatine-coated cathartic pills in the stomachs of our victims, which manifested a much stronger inclination to “come up” than they did in the above instance.

It is officially announced that Senor Rafael Alcalde, of Brasil, has been appointed Surgeon-Dentist to the infant King of Spain, whose birth lately gave rise to so much rejoicing in the Spanish capital. The *Globe* inquires, very naturally, whether the young King was born with teeth. In any case, the part of this professor of the gentle dental art will, for some months to come, be as much a sinecure as that of the surgical instrument maker, who was recently addressed by a country customer as “suspensory bandage maker to Her Majesty the Queen.”

The *Medical Press*, in the name of accuracy, protests against the allusion to Dr. Watson as the author of a “monogram” on Amputation.

We would remind our good friend from Buffalo that the “monogram” was the *initial essay* of Dr. Watson on the subject.

A carpenter knocked his rival’s teeth out with an axe, and then claimed that it was an axe-dental operation.

CHICAGO DENTAL CLUB.

A new dental society was organized in Chicago on May 18th, under the name of the Chicago Dental Club, and the following officers were elected :

President—L. P. Haskell, D. D. S.

Vice-President—Chas. P. Pruyn, M. D., D. D. S.

Secretary—Arthur B. Freeman, M. D., D. D. S.

Treasurer—Dr. E. M. S. Fernandez.

Business Committee—John S. Marshall, M. D.; E. S. Talbot, M. D., D. D. S., and Dr. I. A. Freeman.

This society will be in affiliation with the American Dental Association, and one of its chief aims will be the development of the younger men in the Chicago profession.

CHICAGO, June 1, 1886.

ARTHUR B. FREEMAN,
 Recording Secretary.

JURY DUTY.

In the *INDEPENDENT PRACTITIONER* for March, 1885, p. 169, is an item headed "Jury Duty," which states that according to chapter 358, Laws of New York, 1881, dentists are exempt from jury duty.

I have taken pains to look the matter up and find it erroneous. The impression is made that it applies to New York State.

The Code of Civil Procedure, under exemption of jurors, § 1030, subdivision 4, says: "A practicing physician or surgeon, having patients requiring his daily attention, is exempt from jury duty." This applies to New York State, *except* New York and Kings Counties.

§ 1081, subdivision 2, reads the same as chapter 358, Laws of New York, 1881, and applies to New York County only.

Chapter 358, Laws of New York, 1881, applies to Kings County only, as will be seen. It reads as follows: An act to amend the Code of Civil Procedure, passed May 25th, 1881. § 1, Subdivision 2, of section eleven hundred and twenty-seven of the Code of Civil Procedure is hereby amended so as to read as follows:

2. A practicing physician, surgeon or dentist-surgeon, having patients requiring his daily professional attendance, and not following any other calling, and a licensed pharmacist or pharmacist, while actually engaged in his profession as a means of livelihood, shall be exempt from jury duty.

§ 2. This act shall take effect immediately.

It is thus seen that the general law, § 1030, governs the exemptions outside of Kings County: § 1081 those in New York County: and § 1127, amended as chapter 358, Laws of New York, 1881, those of Kings County.

The special legislation for those two counties ought to be extended to the whole State, and I can only account for the exemption mentioned in the *INDEPENDENT PRACTITIONER* for March, 1885, p. 169, as being in Kings County, or that the judge who granted it did not take pains to see that that chapter referred exclusively to Kings County, through the § 1127 amended.

W. C. HAYES, M. D. S., Albion, N. Y.

DENTAL SOCIETY OF THE STATE OF NEW YORK.

At the annual meeting held at Albany, N. Y., May, 1886, the following officers were elected for the ensuing year:

President—Norman W. Kingsley, New York.

Vice-President—B. Rathbun, Dunkirk.

Secretary—J. Edw. Line, Rochester.

Treasurer—H. G. Mirick, Brooklyn.

Correspondent—W. H. Atkinson, New York.

A. M. Holmes, of Morrisville, and A. P. Southwick, of Buffalo, were re-elected members of the Board of Censors.

The degree of M. D. S. was conferred upon W. N. Frazer, of Danbury, Conn., J. L. Appleton, of Albany, N. Y., and J. H. Frull, Brooklyn, N. Y.

W. W. Walker, S. B. Bridge, O. J. Gross, W. C. Stewart, and F. A. Green were elected permanent members.

J. EDW. LINE, Secretary.

THRUSH IN CHILDREN.

Not long since I had brought to me a child of six months, suffering from the following symptoms :

Constipation, at times irregular action of bowels, regurgitation of food and an asthmatic cough. Its mouth was full of thrush sores, and its appearance one of poor nourishment.

It had been given a number of Infants' Foods in vain, one of which I prescribed myself.

By means of mild medication, directed towards the cough and stomach, something was accomplished. Finally I gave "CARNRICK'S SOLUBLE FOOD," and had the satisfaction of having it retained, and at last accounts the child was doing nicely.

I am inclined to think this food is worthy of attention on the part of the profession.

It recommends itself in that it contains caseine, rendered soluble by pancreatine, starch converted into dextrine and maltose. Hence it requires but little preparation, and that is so simple that mistakes cannot occur.

It requires no addition of milk.

It has the advantages and none of the disadvantages of the many foods now in the market, and forms a nearly physiological substitute for mother's milk.

Very truly, C. F. DENNY, in *Northwestern Lancet*.

St. PAUL, June 1, 1886.

A NEW HEMOSTATIC AGENT.

The following notice appears in the "*Popular Science News*" for June, 1886 ;

"Dr. Spaak, of Brussels, claims for the following simple solution excellent, not to say fabulous, results : Chloroform, two parts ; water, one hundred parts. He says that he has used this hemostatic liquid for several months, and attributes to it the following great advantages :

- 1st. It acts with truly wonderful rapidity ;
- 2d. It possesses no escharotic action ;
- 3d. It is to be had everywhere, and may be prepared instantaneously ;
- 4th. It costs very little ;
- 5th. It possesses no disagreeable effects, and does not hinder the surgeon in his operations.

At a recent meeting of the Louisville Medical Society, Surgeon Godfrey of the U. S. Marine Hospital Service detailed some interesting experiences with this mixture. In his opinion it is the coming hemostatic."

I have employed this preparation a number of times, and may add to the above that when used about the gums and teeth, it possesses for the Dentist the advantages of leaving no clot of blood nor discoloration of the surface.

I have used it upon cotton, and also applied it with a dental syringe or pipette, and have thus far found it satisfactory.

HENRY N. DODGE, M. D., D. D. S.,
MORRISTOWN, NEW JERSEY.

THE INTERNATIONAL MEDICAL CONGRESS.

This journal has refrained from publishing the names of any of those who, it has been reported, have been appointed to the section of Oral and Dental Surgery in place of those who some time since resigned, and as additions to the Council. But Dr. A. E. Baldwin, of Chicago, sends to *The Journal of the British Dental Association* the following list, which appears in its May number :

President—J. Taft, Cincinnati, O.

Secretaries— { E. A. Bogue, New York, N. Y.
 { F. H. Rehwinkel, Chillicothe, O.

COUNCIL.

F. J. S. Gorgas, Baltimore, Md.	W. H. Morgan, Nashville, Tenn.
J. W. White, Philadelphia, Pa.	A. O. Hunt, Iowa City, Ia.
W. A. Spaulding, Minneapolis, Minn.	G. W. Keeley, Oxford, O.
C. A. Brackett, Newport, R. I.	J. McManus, Hartford, Conn.
J. Richardson, Terre Haute, Ind.	A. L. Northrop, New York, N. Y.
B. H. Catching, Atlanta, Ga.	W. C. Wardlaw, Augusta, Ga.
E. S. Chisholm, Tuscaloosa, Ala.	C. W. Spalding, St. Louis, Mo.
M. W. Foster, Baltimore, Md.	R. Finley Hunt, Washington, D. C.
C. F. W. Bodecker, New York, N. Y.	E. Palmer, La Crosse, Mo.
G. J. Friedrichs, New Orleans, La.	R. R. Andrews, Cambridge, Mass.
C. A. Marvin, Brooklyn, N. Y.	S. B. Palmer, Syracuse, N. Y.

ELECTRICITY AS AN ANÆSTHETIC.

History repeats itself. Circulars now haunt the profession, resurrecting electricity as a local anæsthetic. As far back as July, 1858, an article by "J. D. W.," on "The Galvanic Process" in extraction of teeth, appeared in the *Dental News Letter*, and in vol. xii. of the same journal, half a dozen more articles on extraction and extirpation of pulp, by electricity, were published. It was then the general craze. A lad, wishing to have several teeth extracted by electricity, once came to me, but when the forceps were presented to his mouth, he drew back and protested. He wanted them out by electricity, not with forceps.

After a thorough trial it was abandoned, as to many the electric shock was worse than simple extraction. With many patients it is the knowledge of the operations that kills, more than its severity, and such are not benefited by local anæsthetics. When the health, and even the life, of the patient seems to be in jeopardy, and the shock of extraction is more to be dreaded than the dangers of anæsthesia, it is best to give a general anæsthetic, because then we know that the operation can be performed without the fight or fright of consciousness. Electricity in such cases would be useless.

JNO. D. WINGATE,
 Carbondale, Pa.

DENTAL JOURNALS WANTED.

The editor of this journal will pay cash for the following numbers of dental journals, or an exchange will be made with those who desire to complete their own files.

THE DENTAL REGISTER.

Vol. III, Nos. 1, 2, 3.
 " VI, " 1, 2, 3, 4.
 " XXXVI, No. 1.

AMERICAN JOURNAL OF DENTAL SCIENCE (Third Series).

Vol. II, No. 8.
 " V, " 3, 7, 11.
 " VI, " 2, 3, 5, 7, 10.
 " VII, " 2, 3, 7.
 " VIII, " 6, 7, 10.

Dr. Frank Abbott, No. 22 West 40th Street, New York City desires the following numbers :

DENTAL REGISTER.

Vol. 12, No. 11.

AMERICAN JOURNAL OF DENTAL SCIENCE.

Vol. V, Nos. 3, 7.
 " VI, " 2.
 " XVI, " 9, 10, 11, 12.

PENNSYLVANIA STATE DENTAL SOCIETY.

The 18th annual session of the Pennsylvania State Dental Society will be held at Cresson Springs, commencing Tuesday, July 27th, at 10 A. M., and continuing three days. Rates at the Mountain House, \$3.00 per day, to delegates and their families. The Pennsylvania Central, Northern Central and Philadelphia and Erie Railroads will sell special excursion tickets, orders for which can be obtained from the Corresponding Secretary, otherwise regular excursion rates will be charged. Other roads will sell at the usual excursion rates. Programmes and general information to be obtained from

W. H. FUNDENBERG,
 Corresponding Secretary,
 958 Pennsylvania Ave., Pittsburg, Pa.

MARRIED.

At Kansas City, Mo., Tuesday, May, 18th, by Rev. C. L. Thompson, Dr. J. D. Patterson, to Miss Carrie Cooper.

The many friends of Dr. Patterson will be glad to learn of what he has at last accomplished. We wish him and his estimable wife a long, happy, and prosperous life.

SIXTH DISTRICT DENTAL SOCIETY.

The following is the list of officers elected at the seventeenth annual meeting of the Sixth District Dental Society of the State of New York :

President—G. W. Melotte, Ithaca.

Vice-President—S. W. Adamy, Union.

Secretary—E. D. Downs, Owego.

Treasurer—Frank B. Darby, Elmira.

Censor—C. G. Sumner, Norwich.

Delegates to State Society—G. W. Melotte, Ithaca, 4 years; Frank B. Darby, Elmira, 4 years; C. E. Dunton, Cazenovia, 1 year.

NEW JERSEY STATE DENTAL SOCIETY.

The sixteenth annual meeting of the New Jersey State Dental Society will be held at the Coleman House, Asbury Park, July 21, 22, and 23. Dr. Wm. Herbst, of Bremen, has kindly consented to give a clinic on his method of filling teeth by rotation. A cordial invitation is extended to all members of the profession to meet with us. Asbury Park is two hours from New York or Philadelphia, on the sea shore. Rates, \$2.50 and \$3 00 per day.

CHAS. A. MEEKER, D. D. S.,
Secretary.

MINNESOTA.

The Minnesota State Dental Association will meet in the State Capitol at St. Paul, July 21st 22d and 23d. A cordial invitation is extended to members of the profession.

M. G. JENISON, SECRETARY.

The Minnesota State Board of Dental Examiners will meet at St. Paul, in the Ryan Hotel, at 9 A. M., Friday, July 25th, immediately after the close of the Minnesota State Dental Society.

J. H. MARTINDALE.
Secretary.

JOHN TOMES, F. R. S., F. R. C. S., L. D. S., of London, England, the well known dentist and writer upon dental subjects, and the Father of English Scientific Dentistry, has had the honor of knighthood conferred upon him by the Queen, and is now Sir John Tomes. If these decorations were always as worthily bestowed as in this instance, they would be valued even more highly than they now are.

THE ANNUAL MEETING of the British Dental Association will be held in London on the 19th, 20th and 21st of August, under the presidency of Sir Edwin Saunders. The Society is not strictly a scientific body, but it has under its charge the ethics and general management of professional affairs under the dental act.

THE SECRETARY of "The Dentists' Scientific and Benevolent Association," which was organized about three years ago, sends out the announcement of the first assessment for the death of a member. Few dentists are acquainted with the Association, but it is a mutual assurance and benefit society formed in the west, and it would be well if every eastern dentist could belong to it. There is no reason why dentists, as well as members of other professions, should not have their benefit associations. Each of us can recall more than one case in which a dentist of prominence has died leaving little provision for his family. Had he been a member of such an organization as this, a fund, sufficient for immediate wants at least, would have been secured. Those who wish to know more of the Dentists' Benevolent Association can obtain the information by addressing the Secretary, Dr. R. I. Pearson, Kansas City, Mo.

IN MANCHESTER, ENGLAND, recently, a dentist named Jackson was sued for civil damages for the alleged seduction and consequent pregnancy of a young woman aged twenty-five. It appears that she went to Jackson for the purpose of having a tooth extracted, and while under the influence of the gas she claimed that the defendant ravished her. The jury failed to agree. The case presents some unusual particulars. In the first place, the young woman made no complaint for a long time, and even permitted the banns of marriage between herself and a young man to whom she was engaged to be married to be published, without informing him of her condition. Then she preferred a civil claim for damages instead of making a criminal complaint. Every dentist knows that such a charge is grossly improbable, and the suit should properly have been dismissed.

MR. J. W. LAMBERT, of "Listerine" fame, won great distinction at the late meeting of the American Medical Association. To him is given the credit for the local success of the meeting. When everything promised failure he organized victory, and by his personal efforts alone insured the proper entertainment and care of the guests, all the time modestly keeping himself in the background, never seeking notoriety, but quietly doing the work while others bore the honors. In recognition of his labors, and in gratitude to him, the committee of arrangements presented him with a beautiful Jurgensen watch, suitably engraved. "Listerine" must be a wonderful antiseptic. It saved the American Medical Association.

DR. W. B. SLATER, in *The Lancet*, describes the case of a working girl who had delirium tremens caused by chewing tea leaves. She had acquired the habit while working in a factory, and when she was deprived of the tea she was in a condition analogous to that of a confirmed inebriate when deprived of alcohol. The delirium tremens was well marked and characteristic.

DR. CURRAN, in the *Southern California Practitioner*, says that some of his townsmen have lately gone to the City of Los Angeles for treatment, and "returned home with yards of tapeworm in bottles, very handsome, and doubtless worth all they cost." They can be kept as a lasting souvenir of the place, as they will not decay, *being made of celluloid*.

A CHICAGO PAPER tells the following of the well-known Dr. J. Adams Allan, when he was commencing practice. One winter's day, all muffled, he was riding in a street car, when he overheard two persons talking about him. One asked the other what sort of a doctor was this Allan? "All I know of him is that he snatched my aunt from the grave last summer." "Did he, indeed," said the other, "well, then, he must be a pretty good doctor. What was the matter with your aunt?" "Oh! she was dead and buried, you know."

GOODYEAR DENTAL VULCANITE COMPANY REDIVIVUS.—A circular from a former agent informs those against whom decrees and damages were granted in favor of the company, and those who settled by notes not yet paid, that the interests of Josiah Bacon are now in the hands of the said agent, who is ready to receive the amounts due.

Josiah Bacon's body lies mouldering in the grave,
But his soul is marching on.

IT IS ESTIMATED that coca is used by 10,000,000 of the human race; betel nut by 100,000,000; chickory by 40,000,000; coffee by 100,000,000; hashish is eaten or smoked by 300,000,000; opium by 400,000,000; 500,000,000 use tea, and all the known people of the earth use tobacco. The desire for some drug that has a specific action in the modification of nervous force seems universal, and before it is eliminated man must be re-created.

TOOTHACHE, when caused by acidity of the saliva acting on the exposed nerves, is promptly relieved by a strong solution of bi-carbonate of soda, used as a mouth wash and dentifrice.—*Exchange*.

Toothache is not caused by acidity of the saliva, and so the idea of using the solution named is nonsense. The acids of the mouth do not have their origin in the saliva.

TOO LATE for insertion in this number comes a communication from Dr. A. M. Dudley, informing delegates to the American Dental Association that he can secure for them the extremely low rates promised the Association if it went to California, with extension of time. If any desire to go, after the Niagara meeting, let them address Dr. Dudley, at Salem, Mass., without delay.

DR. DIO LEWIS, the Sanitarian, died May 20th. He was a very voluminous writer upon hygienic matters, and formulated more than one system which, if diligently followed, would preserve, he said, the body in perfect health for an indefinite time; yet Dr. Dio Lewis did not live out the allotted years of man.

IT COSTS \$36 65 to govern a New Yorker; \$7.40 to control an inhabitant of London; \$7.35 of Berlin, and \$5.40 a citizen of Paris. That is what the municipal government of each city costs, *per capita*. Are New Yorkers so comparatively refractory?

MANY DENTISTS who met Mr. C. A. Sykes, the genial agent of C. Ash & Sons, manufacturers of dental goods, London, when he was in this country, will be glad to know that he will return about the first of September. He comes in the interest of the Messrs. Ash.

DENTISTS WHO PROPOSE to attend the Niagara meeting should read the advertisement of the Prospect Park Hotel, in this number. It is an excellent house, is conveniently located, and its proprietor takes special pains to make his guests comfortable.

EVERY MEDICAL STUDENT is familiar with "Fehling's Test" for determining the presence of sugar in the urine. Prof. Fehling, of Stuttgart, who first proposed the reagent that goes by his name, has lately died at the age of seventy-two.

THE PRACTITIONER relates a case in which a lady was twice seriously poisoned by taking an egg in brandy. It was a personal idiosyncrasy, and neither the mother nor grandmother of the lady could eat eggs.

THE CHICAGO DENTAL SOCIETY lays out its work in advance. A programme has been issued containing the list of essays with the essayists for each meeting, completed to January, 1890.

DR. WILHELM HERBST, of Bremen, Germany, will be tendered a reception and dinner under the auspices of the First District Dental Society of New York, on Friday evening, July 2d.

DR. C. S. STOCKTON, of Newark, New Jersey, goes to Europe again for his summer vacation. He sails in July, and will spend the most of his time on the Continent.

DR. C. L. HUNGERFORD, of Kansas City, sails from New York for Europe about July 1st. He will spend the most of his time in Germany and France.

IT IS ALWAYS PROFITABLE to attend society meetings. One dentist has made \$20,000 through attending the Minneapolis meeting last summer.

THE SOUTHERN DENTAL ASSOCIATION meets at Nashville, Tenn., Tuesday, July 27, and will remain in session four days.

THE MISSOURI STATE DENTAL SOCIETY will hold its annual meeting at Sweet Springs, commencing Tuesday, July 6th.

THE CALIFORNIA STATE DENTAL SOCIETY meets on Tuesday, July 20th, at San Francisco.

THERE ARE REPORTED 3,164 deaths from small-pox in Montreal last year.

"PREVENTIVE MEDICINE."

PROPHYLACTIC, ANTISEPTIC, DISINFECTANT.
LISTERINE
NON-TOXIC, NON-IRRITANT, NON-ESCHAROTIC.

These properties added to the absolute safety of Listerine, its agreeable character and uniform strength, concentrates into this preparation every requisite of a perfect Prophylactic, and gives it undoubted superiority over all other Antiseptics, especially for internal use. The well-known therapy of the several ingredients of Listerine confirms its claims for more than merely mechanical germicidal properties.

Formula.—LISTERINE is the *essential Antiseptic* constituent of Thyme, Eucalyptus, Baptisia Gaultheria and Mentha Arvensis in combination. Each *fluid drachm* also contains *two grains of refined and purified Benzo-Boracic Acid*.

Dose.—One teaspoonful *three or more times a day* (as indicated). As a local application to ulcers, wounds and abscesses, or as a gargle, mouth-wash, inhalant or injection, it can be used *ad libitum*, diluted as desired.

The universal commendation of LISTERINE by Physicians and Scientists of all Schools throughout the United States, after five years' thorough Clinical Experience, has fully established its value in PHTHISIS, DYSPEPSIA, DIPHTHERIA, CATARRH, DYSENTERY, SCARLATINA, SMALL-POX, ERYSIPELAS, TYPHOID and other FEVERS; and as the most grateful and pleasant disinfectant and prophylactic for VAGINAL INJECTIONS in OBSTETRICS, LEUCORRHOEA, GONORRHOEA, and, notably, for the hands, after Surgical and Gynæcological Operations.

This accumulated evidence of merit indicates its special adaptability to

DENTAL PRACTICE.

The testimony of its value in the treatment of **ORAL DISEASES**, in Dental Practice, is set forth in a special pamphlet on that subject to be obtained gratis on application, together with many Valuable Clinical Notes and Reprints by Eminent Surgical, Medical and Dental Authors.

☞ Three Reprinted Lectures on **CHRONIC NASAL CATARRH**, (illustrated by forty wood cuts,) by Prof. GEORGE M. LEFFERTS, M. D., New York City, are now ready for delivery, free of cost, to those who mention this Journal in making application.

LAMBERT PHARMACAL CO.,

New Office and Laboratory. - 116 Olive Street, ST. LOUIS.

TO MACKINAC.

SUMMER TOURS. PALACE STEAMERS. LOW RATES.

Four trips per week between Detroit, Mackinac Island, St. Ignace, Cheboygan, Alpena, Harrisville, Oscoda, Sand Beach, Port Huron, St. Clair, Oakland House, Marine City. Every week day between Detroit and Cleveland. Special Sunday trips during July and August.

Our Illustrated Pamphlets, Rates and Excursion Tickets will be furnished by your Ticket Agent, or address

C. D. WHITCOMB, Gen'l Pass. Agent,
DETROIT & CLEVELAND STEAM NAVIGATION CO.
DETROIT, MICHIGAN.

WANTED.

A situation as Mechanical Assistant. Age, 26 years. Ten years' experience. Address

"MECHANICS,"

Care of the Editor of the INDEPENDENT PRACTITIONER, Buffalo, N. Y.

WANTED!—*Your address, to introduce an important subject, one that interests every Dentist, personally. For Four two-cent stamps will send valuable pamphlet—A Sensitive Point; 32 pages.*

6-6-X-0.

CHAS. HOUGHTON,

Dentist, Batavia, N. Y.

J. R. MICHAEL'S PREPARED DENTAL FLOSS

Is the best and purest Silk Floss in use. It is full size and length—12 yards to the spool. Delivered free to any part of the United States.

For one dozen J. R. Michael's Prepared Dental Floss, - - 84 cents.

Address,

J. R. MICHAEL,

STEWART BUILDING, N. Y. City.

11-5-1/6-1/4

PARTNER WANTED

To take the place of one who will retire from the dental business, in a house which manufactures paying Specialties.

Address, with full information, "Dental Dealer,"

Care of No. 208 Franklin Street,

7-6-00-1/6

BUFFALO, N. Y.

DR. G. C. DABOLL

Desires to inform his professional friends that he is permanently located at

NO. 14 AVENUE DE L'OPERA, PARIS, FRANCE,

Where he will be at the service of any patients whom they may kindly refer to him.

4-6-AN4-1/4

AKRON DENTAL RUBBER

The materials of which this Rubber is composed
are prepared by new processes,
which insure

ABSOLUTE PURITY,

Resulting in a Product of Wonderful

DENSITY, FIRMNESS AND STRENGTH.

It is especially designed to meet the requirements of those who seek to produce the most perfect and artistic work.

It is exceedingly tough and light, and takes a beautiful polish.

Plates may be made very thin without danger of splitting or crumbling away about the edges.

It can be used with the best results for making partial lower dentures, an advantage which no other rubber possesses.

It has the unqualified approbation and endorsement of the profession everywhere, and never fails to give satisfaction.

It will cost you nothing to try it.

Send for samples and prices.

AKRON RUBBER WORKS,

AKRON, OHIO.

Sold by all Dental Depots.

TO THE
DENTAL PROFESSION
IN THE UNITED STATES.

We desire to state that our representative, MR. C. A. SYKES, will visit the United States in the early part of September, with a large stock of our

Mineral Teeth, Dental Rubbers, Etc.

We thank the profession for the liberal support already extended to us, and trust they will inform us of any difficulty they may find in obtaining our Teeth and Rubbers, so that we may do our best to remove it.

CLAUDIUS ASH & SONS,

MERCHANTS AND MANUFACTURERS OF

Mineral Teeth, Dental Rubbers, Instruments, Etc.,

6, 7, 8 and 9 Broad St., Golden Square,

LONDON W., England.

BRANCHES—Liverpool, Manchester, Paris, Berlin, Vienna, Hamburgh, Copenhagen, St. Petersburg.

ESTABLISHED UPWARDS OF 70 YEARS.

Our MINERAL TEETH

Possess the following desirable qualities.

1. NATURAL FORMS—

In great variety and of various sizes and lengths.

2. COLOURS—

Ranging from very light to very dark shades, and closely resembling the various colours of the human teeth.

3. TEXTURE—

Non-porous, so that they can be *ground* and *polished* to suit particular cases, therefore being well adapted for Bridge work.

4. STRENGTH—

Possessing unusual strength on account of their fine and close texture.

5. SOLDERING—

Bearing in an extraordinary manner the sudden transitions of temperature, so that they can be *soldered without cracking*. Our representative received corroborative evidence of this fact from many of the most prominent dentists in the United States.

Our DENTAL RUBBERS

Are much esteemed for their *purity, strength and solidity*.

In order to maintain their uniformity and excellence, they are made under our own personal supervision; and are thoroughly tested for strength, colour, etc., before being offered for sale; the materials of which they are composed are of the best and purest that can be obtained, and are quite free from everything which can injuriously affect the gums or general health of the wearer. **Professor Attfield, F. C. S., who has put our Dental Rubbers to severe tests** in order to settle the question of such a possibility, thus concludes his exhaustive report upon them: "I am of opinion that the vulcanite teeth-plates made from your Rubbers are practically unaffected by saliva or by any substance which ever gains access to the mouth; and, in short, that the pink and red vulcanite gums and palates are absolutely harmless."

CLAUDIUS ASH & SONS.

"ACME GOLD FOIL."

ABSOLUTELY PURE GOLD.

After twenty years as a practical Gold Beater and Refiner of Gold and Silver, and manufacturer of Gold Leaf in various shades and qualities, I am in position to state that there is no purer quality of Gold Foil manufactured, no matter how great the reputation of others, whether domestic or foreign.

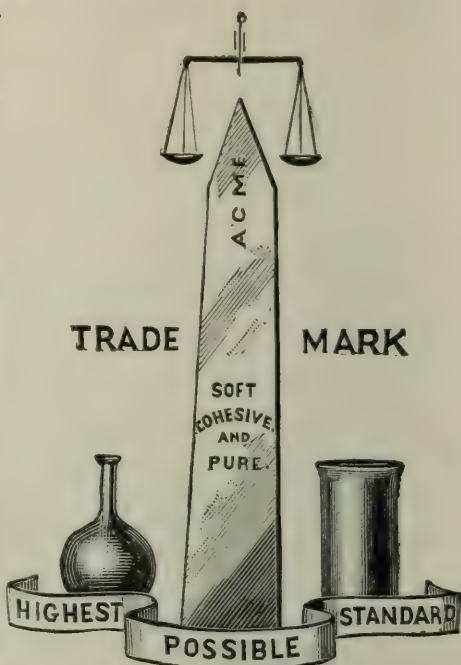


Cylinders \$30.00 per oz.; $\frac{1}{8}$ oz. \$3.75. Acme Cylinders are made from our Acme Soft Foil, which is absolutely pure. The name Acme is given to this Gold for the reason that it is as pure as it is possible for chemical agencies or human hands to produce.

Acme Soft Foil, \$28.00 per oz.; \$3.50 per book of $\frac{1}{8}$ oz.

Crystal Surface, or Corrugated Foil, softest working Foil known, \$28.00 per oz.; \$3.50 per book of $\frac{1}{8}$ oz.

Acme Folded Foil, a convenient substitute for Cohesive Foil, easy to handle and anneal \$28.00 per oz.; \$3.50 per $\frac{1}{8}$ oz.



Appended a few of numerous Testimonials:

BROOKLYN, N. Y., Nov. 21, 1885.
I think Henry's Gold the finest, *without any exception*, I ever used.

FRANK P. ABBOTT.

ATHENÆUM, BROOKLYN, N. Y., Sept. 10, 1875.

MR. HENRY,

Will you have your agent call on me. I had a book ($\frac{1}{8}$ oz.) of your gold a long time since, and when the agent last called I told him I didn't know whether I liked it or not. Since then I found a package unopened, have used it and like it much.

Truly,

A. N. CHAPMAN.

NEW YORK, Aug. 22, 1885.

MR. T. J. HENRY,

Dear Sir,—Your agent left one book of your Corrugated Gold Foil for trial, and I would not be doing you justice without saying that it works equal to any Gold I have ever used. Please send agent with a further supply and oblige,

Yours, respectfully,

V. VAN VLECK, M. D.
284 6th Ave.

One of the many testimonials we receive almost every hour in the day:

Dear Sir,—Please send your man with Foil.

Yours truly,

NEW YORK, Sat., Nov 14, 1885.

N. M. BECKWITH,
21 West 37th St.

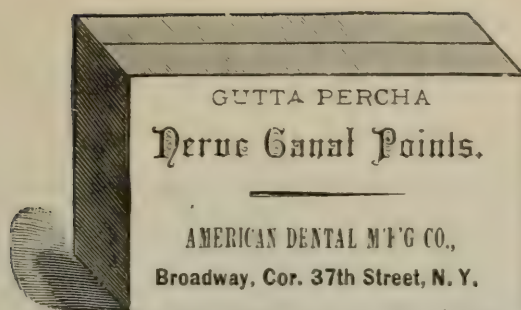
Gold will be sent free of cost to any part of the United States or Canada. Remittances must accompany all orders.

ADDRESS,

T. J. HENRY, GOLD LEAF FACTORY,
No. 16 Centre St., N. Y.

ESTABLISHED 1875.

P. S.—Dental Depots supplied at a liberal discount. Special Brands of Gold manufactured according to orders.

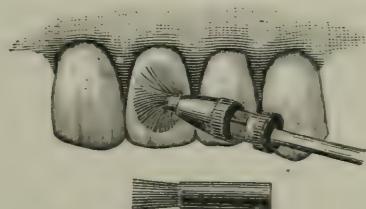


To those that have never seen or used the little Gutta-Percha Nerve Canal Points, manufactured by us for the past year and a half, we would say, that they have been well received, and extensively used by the profession generally. They are very carefully made and nicely tapered, being well adapted for the purpose for which they are intended.

The quality of Gutta-Percha from which they are made is the very best, being good and tough, permits bending in any shape, and easily worked.

PRICE PER PACKAGE OF 125 POINTS, 50 Cents.

SMALL POLISHING BRUSH.



The brush will be found very useful in cleaning teeth and finishing fillings; also in polishing the walls of cavities in preparing them for filling.

The brushes are made in three grades—soft, medium, and stiff—and adapted for use with either the Klump Port Polisher or the R. A. Port Polisher.

Price Per Dozen, - - - - - 50 Cents.

Price for R. A. Port Polisher, - - 30 Cents.

AMERICAN DENTAL MANUFACTURING COMPANY,

BROADWAY, Cor. 37th STREET,

NEW YORK.

CAULK'S FILLING MATERIALS.

ESTABLISHED 1877.

CAULK'S **TRADE DIAMOND MARK** **CEMENT**

AND OTHER DENTAL PURPOSES. EXCELLENT FOR LINING CAVITIES. MOUNTING ARTIFICIAL CROWNS. FOR FILLING TEETH,

CAULK'S DIAMOND CEMENT CAULK'S DIAMOND CEMENT CAULK'S DIAMOND CEMENT CAULK'S DIAMOND CEMENT CAULK'S DIAMOND CEMENT

GRAY. YELLOW. PRICE, \$2.00. MEDIUM. LIGHT.

TWO COLORS.—Gray and Yellow, \$1.50 per Package.
 ONE COLOR.—Gray, Medium, Yellow, or Light, 1.00 “ “

THIS COMPOUND NOW STANDS WITHOUT A RIVAL.

From Five to Seven Years' Test by Leading Dentists Throughout the World has Proved it to be All That Has Been Claimed for it.

For Mounting Artificial Crowns it has been highly recommended; is non-irritating, non-conducting, in harmony with tooth structure, has no shrinkage or expansion, and excellent for lining cavities and capping pulps. It WILL HARDEN IN WATER OR SALIVA. It does not deteriorate with age. Two or more colors blended together (in mixing) will produce any shade desired. The liquid does not crystallize. One writer says it is the “King of Cements.” The demand for it increases. If you have not already tried it, send one dollar for a package.

Fillings that have been standing in the mouth *over* three years, in comparison with other plastic material in the market, show not only its SUPERIORITY, but it has proved to be *more insoluble* than many of the so called insoluble Cements. We have increased the quantity of liquid, and all bottles are lettered “*Caulk's Diamond Cement.*”

It has been pronounced by many to be *harder, more durable, more dense, easier to work, receives a higher finish, and gives better satisfaction* than others in the market.

THE UNIVERSAL VERDICT IS THAT CAULK'S DIAMOND CEMENT IS THE BEST.
 A FAIR TRIAL WILL CONVINCE YOU.

THE Independent Practitioner.

VOL. VII.

AUGUST, 1886.

No. 8.

Original Communications.

NOTE.—No paper published or to be published in another journal will be accepted for this department. All papers must be in the hands of the Editor before the first day of the month preceding that in which they are expected to appear. Extra copies will be furnished to each contributor of an accepted original article, and reprints, in pamphlet form, may be had at the cost of the paper, press-work and binding, if ordered when the manuscript is forwarded. The Editor and Publishers are not responsible for the opinions expressed by contributors. The journal is issued promptly, on the first day of each month.

A VISIT TO FOREIGN DENTAL SCHOOLS AND OTHER OBSERVATIONS.

BY A. W. HARLAN, M. D., D. D. S., CHICAGO, ILLINOIS.

(Continued from page 235.)

The operating room is generally called a "surgery," and is usually situated at some distance from the waiting room, so that no unpleasant odors are detected, or sounds heard by the patient who is next to be operated upon. As most dentists are located in residences, this is generally easy of accomplishment, for our free American method of receiving patients has not been adopted in Europe. The caller is usually conducted to the waiting room by a servant in evening dress. In some establishments I noticed a visitor's register, where the name of the patient is either written by himself or the attendant. I consider this a good idea, as at home many callers do not give their name or present a card, and hence their identity is not disclosed until they enter the operating room. If some such system prevailed with us we could escape many an interruption from transient callers, whose only aim is to sell something, or to inquire about fees, etc.

The dental laboratory is called a "workshop," which it generally resembles, as it is frequently located in the basement, and is supplied, in many instances, with ponderous machinery. Some of these "workshops" are very large, as many artificial teeth are made in England. If the proprietor does a good business, you will find a foreman and several workmen and boys seated at benches, or polishing plates, or engaged in the act of putting up cases or "orders" of teeth. To undertake the manufacture of a set of teeth is called taking an "order." The dentist, or his assistant, takes the impression and "bite," and the work is done below. I believe that the "workman" never sees the patient, except in rare instances. Some of them receive good pay, and they work long hours, about ten or eleven per day. They usually enter the establishment from a side street or alley, and never at the front door. Very few workmen ever attain to the dignity of a registered dentist. Some of them practice dentistry under the name of a druggist or chemist, who got his name registered as a dentist by the act of 1878, because he extracted teeth when the English law went into effect. Many unqualified men in this manner figure as dentists, who really have no right to call themselves such.

In a large city, like London, there are many dental "workshops" not connected with practices, where artificial teeth are made for dentists in regular practice, and I understand that the proprietors of some of them practice the art of mechanical dentistry for the middle and lower classes without being found out by the authorities. From my own observations, there are a good many men practicing dentistry in England whose names are not on the register. Many of these are Americans. They have charge of branch offices, which are quite numerous in London and the suburbs. Most of the Americans thus practicing, either as assistants or in charge of branches, are graduates of American Colleges not recognized by the English Medical Council. In this way English dentists, who may not be expert operators, employ the skill of native "Yankees," and sometimes their cards will say "American operators in constant attendance," etc. The chief ambition of many English dentists is to get on the attending or consulting staff of a hospital or infirmary, because after this is accomplished their fortune is assured. (We Americans are not so slow in this direction.) Professional men everywhere are not likely to throw such opportunities away, when

they generally lead to acquaintance with medical men and the public at large.

I was rather astonished to find so few society organizations in England. The British Dental Association, it is true, meets annually, and there are several branches in various parts of the kingdom, but in London there is practically but one society—the Odontological. A students' society is connected with each of the schools, and they have the Odonto-Chirurgical Society of Scotland, at Edinburgh, but I believe there is no society in Wales or Ireland, unless there be one in Dublin. The membership of the Odontological Society is not large—about one hundred and twenty I believe. There is no American Dental Society in London. There is room for one, and also for two or three native societies. The Association of Surgeons practicing Dentistry is defunct, or if not, their proceedings are no longer published. It is expected that several new branches of the British Dental Association will be established very soon. There ought to be a society in every large city, at least in Great Britain. Liverpool, Manchester, Leeds, Sheffield, Glasgow, Dublin, Belfast, and other cities not so large, could sustain societies, if eight or ten men would go to work and shake off little differences of opinion, which are many times only imaginary, and thus raise the standard by associated effort. Great Britain needs a few missionary dentists to wake up the indolent and routine practitioners. When this is done, more valuable ideas will come to light than many now dream of. It will be a good thing for the people, as more natural teeth will be saved, and after all that is what we hope to accomplish.

Dental journalism is represented by three publications. "The Journal of the British Dental Association" is edited by the accomplished Underwood, a genuinely scientific man, who has already made of his journal a very readable and welcome periodical. It is a monthly, and the subscription price is only about \$1.80 per annum. "The Dental Record" is edited by Thos. Gaddes, one of the veteran teachers of the National Dental Hospital, and its Dean. It is also a monthly, and the subscription price is the same. I have been a subscriber to it from its first issue, and can recommend it to my American confrères. Last, but not least, is the old "British Journal of Dental Science," a semi-monthly, issued the first and fifteenth of every month. This is edited impersonally, though if

so minded I could give the editor's name. I do not propose to say which I think is the best journal, for they have all treated me better than I deserve, by republication of my own articles at various times. The price of the last named is double that of either of the others, but it must be remembered that it appears twice to each of the other's once. I could not be satisfied if I did not see its blue cover on my library table every fortnight from year to year. I am a believer in dental periodicals, and very often in former years it has only been by close economy that I could take them all. I have never regretted the sacrifice, as I have usually found something of value even in the smallest and most insignificant of the quarterly advertising sheets. I recommend more of the American dentists at home to become subscribers to at least one of the journals named, as it will well repay them for the outlay, and they will thereby see how great a world lies beyond their own horizon.

In closing this paper on the customs and habits and other things seen in Great Britain, a word or two must be said about the dental depots. We are apt to think that they are very much behind us in producing novelties in the way of new instruments and appliances. This is a mistake. There are several large establishments in London whose sales of goods of their own manufacture must be enormous. Albion is the land of cements, amalgams, artificial teeth, nitrous oxide, rubbers, forceps, and modeling compounds. Many American inventions are brought out in England almost as soon as they are sold here. One reason why so many goods of American manufacture are sold in England, is because there is no tariff. Our prohibitory tariff laws, on the other hand, prevent the English merchants and manufacturers from introducing their goods into this country, by reason of the excessive duties levied upon them. When we are not certain that we are to get good value for our money, we do not invest in goods of foreign workmanship, and as the duties are so high, there is scarcely any profit to the dealer who might keep English goods; hence, we seldom see articles of English dental merchandise. I will say for the products of the English dental manufactories, that I have found them in many instances as good in quality, and in some cases much better than our own, and in spite of the heavy duties, quite as cheap as American products.

Every little device which is evolved from the brain of the dentist

is not patented in Great Britain as often as it is at home, and in consequence many small articles do not have fancy prices attached to them. I cannot commend the practice of keeping secret the components of many medicaments which are offered for sale abroad as well as at home, as this sort of quackery is not in keeping with our desire to be considered a learned profession. The habit prevails in England and the United States unfortunately, by some would-be scientific gentlemen, of offering secret anæsthetics, obtunders and other panaceas, at so much per bottle, and when they are advertised in dental journals it gives them a certain value to the illiterate and unthinking, and thereby degrades the profession of which they are members. If the publishers could exclude such advertisements, empirical and quackish nostrums would soon fade out of existence. In the next number I will give my impression of Germany and German dentists.

PYORRHŒA ALVEOLARIS.

LECTURE BEFORE THE CLASS OF THE NEW YORK COLLEGE OF DENTISTRY,
SESSION OF '85 AND '86.

BY ALFRED R. STARR, M. D., D. D. S., NEW YORK CITY.

Pyorrhœa Alveolaris, sometimes called Rigg's disease, catarrhal or suppurative gingivitis or ulitis, and alveolar pyorrhœa, is a disease of which much has been written, but as yet little is known. It is described by some as a disease characterized by a flow of pus from the tooth sockets. The effect upon the gums and alveoli differs very materially from the usual results of salivary calculus, in that in this disease the ulcerative process or retrograde metamorphosis is most marked in the pericementum and alveolus, while the gums are comparatively free. In this affection the destruction and separation of the pericementum and the absorption of the alveoli are greater and more rapid than the recession of the gums, thus resulting in the formation of deep pockets between the gums and the teeth, from which pockets exudes an ichorous or sanious discharge. In cases of salivary calculus proper, with no secondary sanguinary deposit, the recession of the gums, destruction of the pericementum and absorption of the alveolus occur slowly, and the

process is limited to the immediate vicinity of the deposit; so that if we go a little beyond the point of contact of the deposit with the gum, we will find the pericementum and alveolus in quite a normal condition.

This is the case, even when the deposit has encroached upon the alveoli almost to the apices of the roots. Even in these cases we may have a fetid, sanious discharge, but instead of proceeding from deep pockets it comes from the tissues in the immediate vicinity of and directly underlying the deposit. If any pockets are formed in these cases of salivary calculus they are very shallow, and the destruction of the pericementum and absorption of the alveoli show little tendency to increase any more rapidly than the ulceration and recession of the gums. In *pyorrhœa alveolaris* there is frequently no recession of the gums, little or no salivary calculus about the necks of the teeth, and yet we have extensive involvement of the pericementum and alveolus, and usually, if not always, the presence of the dark or sanguinary variety of tartar on the roots.

We sometimes see the manifestations of these two affections, viz., salivary calculus and *pyorrhœa alveolaris*, on one and the same tooth. Thus, on a lower incisor we may have a large accumulation of salivary calculus on the lingual surface, which seems to almost crowd the gum and alveolus before it, while on the proximal and labial surfaces we may find very little salivary deposit, but in its stead a deposit of sanguinary calculus on the root, extending for some distance under the gum. In the case of salivary calculus proper, the deposit precedes and causes destruction of the pericementum, while in this disease some peculiar irritation of the pericementum precedes and causes calcareous deposit.

The etiology of *pyorrhœa alveolaris* is very obscure. Authorities are very evenly divided as to whether the causes are constitutional or local. Some regard it as a localization of a systemic debility, while others believe it to be due entirely to local causes, and amenable to local surgical treatment. Some attribute the occurrence of the disease entirely to the presence of tartar and its effects upon the surroundings of the teeth, while others say that while tartar is usually present it is only a concomitant or sequence of the affection, and never the cause. Those who maintain the latter view declare that the disease sometimes occurs without the presence of any tartar. Professor Abbott has said that he has never seen a case of

pyorrhœa alveolaris without the presence of some deposit, either calcular, serumal, or sanguineous.

I have met with cases in which I have been unable to detect the presence of incrustations, but I would not venture positively to state that there were none present, for there might easily have been some soft, or even calcareous deposit at some inaccessible point, or possibly the lime salts may have been deposited and accomplished the results, and been subsequently removed. Constitutional dyscrasia (hereditary or acquired), extreme density and low degree of vitality of the teeth, suppression of habitual secretions, catarrhal inflammation, the presence of bacteria, of foreign deposits (salivary, serumal or sanguineous), and local irritation from the use of wedges, ligatures, rubber dam, etc., have been assigned as causes.

The influence of heredity in pyorrhœa is often quite marked, the disease being transmitted through several generations. Cases have been noticed in which children born before the acquisition of the disease by the parent or parents have been exempt, while those born subsequently have developed it at quite an early age. Among the cases due to acquired constitutional predisposition may be cited those caused by mercurialization, or some peculiarity of diet, nutrition, or nervous influence.

Pyorrhœa alveolaris very frequently follows mercurial salivation. Professor Abbott is on record as having said that he believes every person who has been salivated suffers more or less from this trouble. The statement has been made that pyorrhœa alveolaris never occurs except in persons who have been salivated, but this theory has not been generally accepted, and I do not believe it is founded on fact.

It is believed by many that excessive use of chloride of sodium will sometimes cause pyorrhœa alveolaris. In support of this theory it is said that the disease is very common among sailors or laborers who subsist largely on salt meats. Some authors assert that imperfect elimination of urea is its principal constitutional antecedent.

Owing to the fact that the disease occurs most frequently in adult life, and in mouths in which there is little tendency to decay, it has been supposed that the immunity from decay implies extreme density and low degree of vitality in the structure of the teeth, which may result in a final severance between them and the more highly vitalized contiguous parts, and thus constitute a predisposing cause of this disease.

In support of the theory that suppression of habitual secretions may aggravate or incite this affection, Dr. Rehwinkel, in the November number of the *Cosmos* for 1877, cites the case of a young lady aged eighteen, otherwise healthy, and with no accumulation of salivary calculus, in whom the teeth became very loose, presumably from the fact that the menses had never been established. The extraction of two or three of her teeth, although they were very loose, produced violent and persistent hemorrhage. Local treatment and hygienic measures checked the progress of the malady, and when, after some months, menstruation was established, the disease disappeared and the remaining teeth became firm. In a recent article in the *Dental Cosmos* (November, 1885), Dr. Patterson has said that he believes the disease to be of a catarrhal nature, and he also inclines to the belief that the calcular deposits are simply the result or sequence of the disease. Dr. Patterson states that in the cases he has observed he has found co-existing nasal, pharyngeal, or laryngeal catarrh (generally combined), in every instance. He believes the disease is generally caused by infection from a pre-existing catarrh of the nose or throat, but states, also, that the catarrhal condition of the mouth may originate in that cavity, and not be due to infection, or (I think he should have said) extension of the disease, at all. These primary cases, he thinks, are most apt to occur in those who are in the habit of breathing through the mouth. In support of his theory Dr. Patterson cites the following points of similarity in the pathology of the two diseases, viz:—Nasal catarrh and pyorrhœa alveolaris.

1st. The similar appearance of the affected mucous membrane in both diseases and in the various stages of each.

2d. The identical character of the effusions, viz.: first serous, containing numerous epithelial scales, and then becoming filled with pus and blood corpuscles.

3d. The infectious nature of both diseases, nasal catarrh being contagious and sometimes epidemic, pyorrhœa alveolaris frequently showing a tendency to spread from one tooth to the next, until all may be affected.

4th. The similar burrowing of pus in each trouble.

5th. The tendency in each to destruction of periosteum and underlying bone.

6th. The calcareous deposits occurring in each disease. (De-

posits of phosphate and carbonate of lime are sometimes formed in cases of nasal catarrh.)

It is possible that the predisposing or constitutional cause of pyorrhœa alveolaris may, in some instances, be a tendency to catarrhal inflammations; but I do not believe, as does Dr. Patterson, that this disease is transmitted from a pre-existing catarrh of the nose or throat. It is true we can have, according to the medical authorities, an extension of catarrhal inflammation from the nose, throat, or even from the stomach, to the mouth, and we then have acute or chronic oral catarrh, or catarrhal stomatitis; but in such cases the process is a general one, and affects not only the mucous membrane of the gums, but also that of the lips, cheeks, tongue, etc., which condition we do not have in pyorrhœa alveolaris. Dr. Patterson states that both nasal catarrh and pyorrhœa alveolaris are of an infectious nature, and further states that text-books all agree that nasal catarrh is not only contagious, but sometimes epidemic.

No less an authority than Niemeyer, in his text-book on Practical Medicine, says: "The somewhat common opinion that a cold in the head is contagious is contradicted by the experiments of Friedrich, who could not succeed in implanting the disease upon the mucous membranes of healthy persons by transferring to them secretions of persons suffering from catarrh in its several stages." Regarding the infectious nature of nasal catarrh, the same author (Niemeyer) says that the epidemic form of coryza is probably only a symptom of constitutional disease. So far as I know, Ziemssen is the only authority who favors the theory of the contagious nature of coryza. All the other authors whose writings I have consulted (including the works of Quain, Pepper, Reynolds, Niemeyer, Bosworth and others), either ignore or deny the contagious theory of this disease, or else speak of it as doubtful. Even Ziemssen admits that, up to the present time, no one has succeeded in demonstrating, by experiment, the contagiousness of coryza, and that all such attempts have resulted negatively. Dr. Patterson states that the contagious nature of pyorrhœa alveolaris is well known to careful observers. The only argument he presents in favor of its contagious nature is that the disease exhibits a tendency to spread from one or more teeth to the adjoining ones, until all are affected.

I think anyone will admit that such a statement is far from proving conclusively that the disease is contagious, in the sense gener-

ally implied by that term, although I notice Ziemssen uses a similar argument in favor of the contagious nature of coryza. The disease does sometimes show a tendency to spread in this manner, but not always; and again, in cases in which the inflammation is general and severe, it may spread to the mucous membrane of the fauces and pharynx. But are we to infer from this that the disease is contagious? We sometimes have a similar extension of the inflammatory process in cases of salivary deposit (on the molars especially), without any indication of real pyorrhœa alveolaris; and yet I do not think anyone will claim that the dyscrasia causing salivary deposit is capable of being propagated from one person to another in any other manner than by hereditary transmission. To my mind, pyorrhœa alveolaris is certainly not contagious, if we use that term in the sense generally implied. If it were so, we would expect dentists to be the principal sufferers, but we know they are not. There may be some instances in which the disease appears to be infectious. The epidemic said to have occurred in St. Gall, Switzerland, in 1876, if the reports be authentic, would be an instance of this kind. In this epidemic the disease was said to be very severe, and investigation demonstrated the presence of numerous parasites (leptothrix, bacteria, &c.) in the secreted matter, but no pus corpuscles. Schlenker, who studied these cases, concluded that the presence of the parasites was the cause of the inflammation of the root membrane. Some observers, among them being Dr. G. V. Black of Illinois, and Dr. Witzel of Germany, believe that the disease is caused by a certain species of fungus. We cannot deny the possibility of such a mode of origin, although I think no one has yet been able to demonstrate, by actual experiment, that there is any specific virus or contagium in this disease. I have endeavored to transmit the disease by inoculation from the human subject to the dog, but so far have been unable to produce anything except a negative result. My method has been to make a slight incision between the gum and the prominent cuspid tooth of the dog, and inoculate with the fresh discharge carried on an instrument directly from the patient to the animal in the next room. It may be that the lower animals are not capable of developing the disease. How that is, I do not know; but I have not, for very manifest reasons, attempted to experiment in this direction upon the human subject. It might be interesting and

instructive to experiment in the mouth of a patient affected with this disease, by inoculating from the socket of an affected tooth to one not affected (by applying the discharge to a denuded surface), and observing the result. I have not as yet experimented in this manner to any great extent. Dr. Patterson states that there is the same tendency to destruction of periosteum and underlying bone in this disease as in nasal catarrh. I beg to differ with him in regard to the tendency to destruction of bone in pyorrhœa alveolaris. In nasal catarrh, when the bone is involved the process is one of caries, or necrosis, while in pyorrhœa alveolaris I think it is only very rarely that we have such a condition; but of this we shall speak further in treating of the pathology of the disease.

Salivary, serumal, or sanguinary calcular deposits, are by many believed to be the most frequent cause of pyorrhœa alveolaris. Some say it is only the sanguinary or serumal variety that is the direct cause of the symptoms of this disease. I believe that in most cases salivary calculus is the exciting cause of the sanguinary, and that after the disease is instituted the salivary assists in forming the deposits on the roots. The local irritation caused by foreign bodies in the alveoli, such as tooth-brush bristles, fish bones, splinters of wood, tooth picks, or parts of fractured teeth or bones, misplaced wedges or ligatures, etc., may result in what we may call traumatic, or acute pyorrhœa alveolaris. The irritation of clasps or partial plates may also be an exciting cause of pyorrhœa. Whether or not there is always a constitutional predisposition in cases of this disease, is still a matter of much controversy. So far as my reading goes, the preponderance of opinion seems to be that there is usually a constitutional predisposition. The traumatic or acute cases, without doubt, are due entirely to local causes, since almost any irritant of the kind described will induce the disease, and the removal of the cause results in a speedy cure. Cases in which salivary calculus irritates the pericementum and causes secondary sanguinary deposit might be classed as traumatic, for the exciting cause is a foreign body; but, although to a certain extent traumatic, they cannot be called acute cases, since the disease when induced by this cause generally assumes the chronic form. Perhaps this may be accounted for by the fact that the salivary deposit increases very gradually, and the irritation is less on that account. I think that even in these cases of pyorrhœa from the irritation of salivary calculus, we must

admit the presence of a constitutional predisposition (I refer now to typical cases, in which we have the deposit of sanguinary calculus and the formation of ulcerating and suppurating pockets); because we know that not all cases of salivary calculus, or of pericemental irritation, are followed by this disease. In fact, it results in comparatively few instances. We often see marked cases of pyorrhœa alveolaris in which we can find little or no deposit about the necks and crowns of the teeth (although the deposit may have been present at the inception of the disease, and been subsequently removed by mechanical or chemical means); while in other cases we frequently see abundant salivary deposits about the necks of the teeth, and would naturally suppose the same or a greater amount of pericemental irritation would exist, and yet we do not have the typical manifestations of pyorrhœa.

The principal argument used by those who favor the local theory is that the disease can be cured by local treatment; but this statement is denied by very many good authorities. It has been asserted that typical cases of pyorrhœa alveolaris are never cured by local treatment alone, and that if the disease is well advanced, especially if it be hereditary or due to mercurialization, it is never permanently cured. I am not sure that we can take such a decided ground as that. In the cases due to salivary deposit, I believe the disease can be cured by the removal of the exciting cause, and by proper local treatment, and that we can prevent its recurrence, provided we can prevent the return of the exciting cause. It is difficult to draw the line between local and constitutional origin in these cases, for if the exciting cause be salivary calculus, that in itself is often dependent upon constitutional derangement for its development. The cases in which we can find no appreciable exciting cause are the ones last amenable to treatment. In such cases neither local nor constitutional treatment, used separately or in conjunction, seems to be of much avail in removing the condition. If there be a predisposing cause in these cases (as I think there is), how can we expect to treat them rationally by constitutional remedies, when we do not know what is the predisposing cause or constitutional derangement that induces the disease? Another argument which has been advanced in favor of the local theory is that the teeth most often affected are those in the neighborhood of the opening of the salivary ducts, those standing behind others in a crowded arch, rotated

teeth, or those misplaced in consequence of injury or faulty articulation. I do not believe that teeth in the immediate vicinity of the salivary ducts, or rather that the surface of such teeth which are nearest to the ducts, are especially liable to this disease.

I think I have met with more cases affecting the upper than the lower anterior teeth, and more affecting the palatal than the buccal roots of superior molars. Granting that teeth inside the arch, or rotated, or misplaced teeth, are more liable to salivary deposits because of want of use or difficulty in keeping them clean, and that teeth which have fallen backward or forward in the arch have their periosteal covering subjected to greater irritation upon the side toward which they have fallen, we may pertinently ask why are not all teeth so situated, or so few of them, when incrustated with salivary calculus or subjected to the same amount of irritation, affected by this disease? To sum up, then, we regard the traumatic or acute cases as essentially local in their origin, since they are so easily induced and are so readily amenable to local treatment without showing any tendency to recurrence; but in the idiopathic or chronic cases, or those of *pyorrhœa alveolaris* proper, we think the causes are both predisposing and exciting, and that there is generally, at least, a constitutional predisposition rendering the disease liable to occur under local irritation, either mechanical or chemical. Salivary calculus, I think, is the most common exciting cause. The irritation of partial plates would probably come next in order of frequency. What the predisposing cause or causes may be, we are as yet not aware. Possibly the same, or a similar influence to that which causes exostosis of the cementum, may operate in determining the origin of this affection, the difference being, that in this disease the lime salts, instead of helping to form an organized tissue, are deposited in an amorphous manner. I think I have met with a greater number of cases affecting the teeth of the superior maxilla than of the inferior; but whether or not this has been the experience of other observers, I am not aware. The disease is one of adult life, and is common to both sexes. It is very rare in young persons, except when hereditary.

POSTSCRIPT.—Since preparing this lecture for publication, I have observed in the April number of this volume an article on the same subject by Dr. J. N. Farrar. Dr. Farrar calls this affection "pocket disease of the alveolus," or "*loculosis alveolaris*," and divides it into several stages. His views of the pathology of

pyorrhœa alveolaris are very similar to my own, as will be seen when space permits of the publication of the remaining portion of this paper. I think Dr. Farrar's diagram of the condition of the parts in this disease is defective in one respect, viz.: around the molar root where the deposit is greater and the separation of the pericementum more advanced, it does not depict to a sufficient extent the amount of absorption of bone that we would have in such a case. I have never seen a case as far advanced as the diagram would indicate, in which the absorption of the margins of the bony socket was so slight.

Dr. Farrar says the cause is not "the same in kind as that which leads to exostosis or enlargement of the root." I would like to ask on what ground that assertion is based. If not the same, I think it quite possible that the cause is very similar. Is not exostosis supposed to be due to an irritation resulting in an excitation of the osteoblasts of the pericementum to a re-performance of their original function: and is it not possible that we have the same conditions in pyorrhœa alveolaris? True, the lime salts in the latter disease do not go to form part of an organized tissue, but we think the reason is obvious. Would we expect to have organization when the conditions are such that we have an open pocket with the pericementum in an ulcerating condition, and the presence of foreign materials (saliva, food, micro-organisms, etc.) to interfere with that process? I quite agree with Dr. Farrar that this disease never begins at the ends of the roots. When there is a tendency to deposit of lime salts in that locality, if there be no abscess and no extraneous matter present, the result is not sanguinary calculus, not pyorrhœa alveolaris, but exostosis.

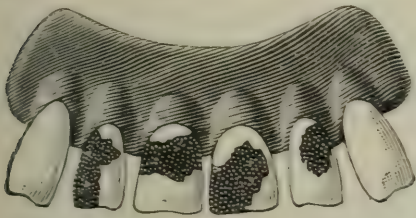
Dr. Farrar makes the rather peculiar and ambiguous statement, that "although necrosis of the alveolar processes is rare, the death and degeneracy of that portion of the cementum constituting one of the walls of the pocket is not common." We presume it should read "not uncommon." I hardly think the doctor is correct, if he means to state that death of a portion of the pericementum is not uncommon as a result of this disease. I presume I have not had as much experience with these cases as Dr. Farrar has had, but I have seen quite a number of them, and yet cannot recall a single instance in which there was death of a portion of the cementum while the root contained a living pulp.

Dr. Farrar says, "When in order to be explicit, it is desirable to express the recurrent form of this disease (after once cured), which is liable in cases where death or low vitality of the cemental wall of the pocket prevents reunion with the pericemental wall, the termination *osis* may be exchanged for *itis*, &c. How can such cases be called recurrent when they are really never cured? Since the disease is one characterized by the formation of pockets, if a part of the cementum dies or degenerates and thus prevents union with the pericementum, then the pockets are not and can not be obliterated, and the disease is not cured. Hence we think it is obviously incorrect to call these cases *recurrent* ones. With the other views of Dr. Farrar, as expressed in his article, I am fully in accord, and would be pleased to hear further from him upon the subject.

A NEW SYSTEM OF RESTORING BADLY DECAYED TEETH BY
MEANS OF AN ENAMELED METALLIC COATING.

BY DR. C. H. LAND, DETROIT, MICH.

This invention consists of an artificial coating of platinum made to fit the outside of the teeth, after which the anterior surface is coated with a porcelain enamel front, made to imitate the natural organs so perfectly that the art is concealed. Many of the long and tedious operations, where it has been deemed necessary to insert large and conspicuous gold fillings, may, by this process, be avoided, while better results are attained.



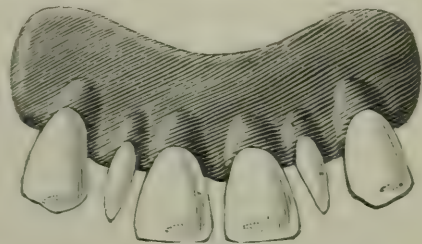
(Fig. 21.)

Fig. 21 is a typical case, where, in place of inserting the usual gold fillings, the anterior surface may be reduced by means of small corundum wheels used in the dental engine, as indicated in Figures 1 and 2, Plate A.

Fig. 13, Plate B, is the prepared crown ready for adjustment to the same by the use of oxy-phosphate cement. Fig. 22 represents a typical case of undeveloped lateral incisors, which can be enlarged to their proper size by the same means.

Fig. 4, Plate A, represents a decayed molar. Fig. 8 is the same prepared to receive the amalgam filling which, when sufficiently hard, is prepared as shown in Fig. 12, ready to have the crown. Fig. 16, cemented to it with oxy-phosphate cement. Fig. 9 is a central incisor, Fig. 10 a cuspid, and Fig. 11 a bicuspid. Figures 13, 14 and 15 the crowns ready for adjustment. Those who object to the use of amalgam may use white cement or gutta-percha for fastening.

The manner of procedure in the case of devitalized and discolored incisors is first to prepare the teeth as shown in Plate A, Figs. 1 and 2. Then a thin piece of platinum plate, No. 30 standard gauge, should be fitted accurately to the tooth, forming a

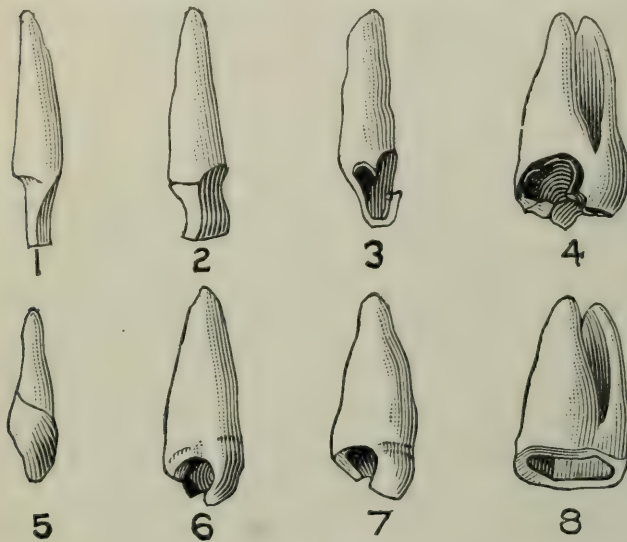


(Fig. 22.)

hollow shell. Enamel fronts are now ground to fit, as shown in Figs. 17, 18, 19, and 20, after which they are fused to the platinum in the same manner as continuous gum work, by using a porcelain body prepared expressly for the purpose. By the use of

Land's Gas Furnace this can be done in ten minutes. The enamel fronts and body are also manufactured and for sale by the Wilmington Dental Manufacturing Co.

Fig. 9 represents a central incisor built up with amalgam or cement, to which the platinum is closely fitted, after which the enamel front, Fig. 17, is ground to fit and fused to the shell, as shown in Fig. 13, ready for adjustment to Fig. 9. Figs. 10, 11, and 12 are modifications for canine, bicuspid, and molars, ready to receive the prepared coatings, Nos. 14, 15, and 16.



(Plate A.)

In introducing this class of work to the dental profession a means is offered through which a much better artistic effect can be attained and the preservation of a larger amount of tooth structure be secured. Add to this the fact that there is but very little pain or fatigue, either for the

patient or operator, and it will be doubly appreciated.

During the past year this class of work has been thoroughly tested as to durability, and found to be much more reliable than gold fillings. In large contour work the frail walls of the tooth must be the main dependence of support, while with the hollow shell the weak tooth is held together. Thus it will be seen how much more complete is the preservation of tooth substance, it not being necessary to make undercuts or retaining pits.

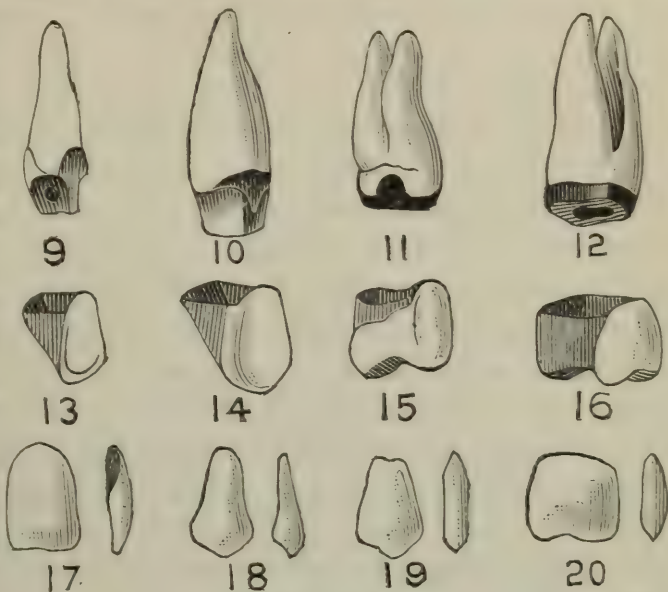
A young lady recently presented herself with both central incisors broken off by an accident, the left one having lost about half its crown, with complete exposure of the pulp; the right one having only about one-sixth of its substance gone. Her teeth were unusually well preserved, while they were large and quite conspicuous. The right central was easily restored to a good contour by a little grinding. The left, after necessary treatment, was simply ground down upon the anterior surface, an operation demanding less than ten minutes

of time. In twenty minutes more a platinum overcoat was fitted to it and the enamel front ground to fit. This completed the first sitting. In the afternoon of the same day it required but a sitting of fifteen minutes to adjust the prepared coating. The result was a

complete restoration with the least possible amount of inconvenience to the patient, and the greatest amount of tooth substance preserved.

Contrast this operation with what it would have been necessary to do had I attempted to restore the tooth by means of a gold filling, or to place upon the root a properly prepared

gold crown. Think of the long and tedious operation, and when completed what a conspicuous piece of mouth jewelry it would have presented, and you may, perhaps, realize a part of the degree of satisfaction which I felt when I had finished my operation. This, together with a series of many similar cases, may form part of a future illustrated article.



(Plate B.)

EXOSTOSIS, OR DENTAL OSTEOMA.

BY W. C. BARRETT, M. D., D. D. S.

READ AT THE TWENTY-SECOND SEMI-ANNUAL MEETING OF THE CONNECTICUT VALLEY DENTAL SOCIETY.

Tumors may be defined as normal tissues abnormally developed, either in position, relative quantity, or structure. Under this definition, dental exostosis must be classed as a benign tumor. It is really a hypertrophy of cementum. Under the stimulus of irritation, many tissues take upon themselves an abnormal growth. The irritation is, perhaps, not sufficiently severe to cause inflammation, but it may stimulate to an increased flow of nutrient material, and

this may be so built into tissue as to produce the hypertrophied growth. There may be this condition in two of the tissues of a tooth, the dentine and the cementum. When it takes place in the dentine, besides the thickening of the dentinal walls there may be a deposit within the pulp chamber and connected with the internal parietal that, in some instances, causes intense pain. Or there may be concretions within the substance of the pulp itself, presenting many of the characteristics of dentine, and these are at times the source of great annoyance.

The term Dental Exostosis is, however, commonly confined to an hypertrophied growth of the Cementum. A complete comprehension of this abnormal condition would lead us to an exhaustive study of the character and function of the dental pericementum, as it has been commonly supposed that this membrane is active in the formation of the cementum. I cannot, however, do more than briefly to notice some of the theories concerning its office.

Salter declares the pericemental membrane and the periosteum lining the socket one, a single membrane ministering to the nutrition of the cementum on the one side and the bone on the other. (Dental Pathology and Surgery, p. 14.)

Dr. L. C. Ingersoll, in an exhaustive paper upon this subject, read before the last meeting of the American Dental Association, asserts that it is a double membrane, dipping from the alveolar border into the tooth socket, and reflected back upon the root. (Transactions American Dental Association, p. 126 *et seq.*)

Dr. G. V. Black asserts that it is not a periosteum at all, but is a vascular membrane connecting the tooth with its socket, and has nothing to do with the nourishment of the cementum. (See *INDEPENDENT PRACTITIONER* for June, 1886, p. 308.) He declares that it is but a fascia, and says that the nutrition of the cementum is wholly due to the osteoblasts which line its surface, but which form no part of the peridental membrane proper. Whatever may be the dental office of this tissue, it is certain that it is highly vascular in its nature, and that it supplies the osteoblasts with nutrition, and that it is so intimately connected with them that it may, for our purpose, be considered as either directly or indirectly supplying the needed pabulum to the cementum of the tooth.

Cementum closely approaches true bone in its structure. There are the canaliculi and the lacunæ of bone, but their arrangement

into lamellæ is not as perfect as in true osseous tissue. It is more closely allied to primary bone, or that which has been developed in temporary cartilage, or upon the surface of existing bone. (Dental Surgery; Tomes, p. 424.) The periosteum of bone, under a certain stimulus, will deposit additional layers, or in some cases concretions of true bone. In fractures there is a deposit of what is termed "callus," and this is organized into osseous tissue. We know that in bone it is the office of the osteoblasts to furnish the material of which it is composed, and as cementum so nearly approaches bone in its structure, the process must be analogous.

These osteal cells, or osteoblasts, lie at the immediate surface of the bone, or wherever bone is being developed, whether in cartilage, in membrane, or in periosteum. (Tomes; Dental Surgery, p. 425.) The pericementum, upon its inner surface, is covered with a layer of these cells. They are in immediate contact with the cementum, and under the stress of some undue stimulation they deposit upon it continuous layers, which form that abnormal condition that we call Exostosis.

The structural character of cementum depends largely upon the thickness of the layer. At the cervix of the tooth, where it is very thin, the lacunæ are altogether absent, and the canaliculi are not at all marked. But if sections are made at a little distance from the neck of the tooth, where it is thicker, the canaliculi begin to appear, and further on they are arranged into lacunæ and the canaliculi begin to anastomose, forming a connection between the corpuscles.

True bone is traversed by vascular tracts called Haversian canals. In cementum, as existing in normal thickness, there are no Haversian canals, but in hypertrophied cementum, or where this tissue exists in considerable thickness, the Haversian canals make their appearance, and the resemblance to true bone is almost complete. The deposition of cementum, then, in that condition which we call exostosis, is an analogue of the formation of secondary bone tissue, and must be studied in the same light.

Osteoma, or the formation of osteophytes, has been traced to different kinds of periosteal irritation. They may exist almost anywhere, but hypertrophies of bone tissue are especially common upon the maxillæ. Tomes remarks upon the extraordinary facility with which the jawbones change their shape. (Dental Surgery, p. 430.) Alveolar abscesses erode great hollows in them. Many teeth

are extracted, leaving the bone in a very irregular, cavernous condition, yet a little time entirely removes all traces of the injury. The jaw-bones may be expanded by tumors beyond all semblance of their original shape, but removal of the tumor is quickly followed by a restoration of the bone to its normal condition. Large portions of the maxillæ may be excised by surgical interference, but they are quickly restored if the conditions be favorable and the periosteum be not entirely removed. An odontome may expand the bone until but a mere shell remains, but if this be broken down and the tumor removed, it again returns to the shape of a hard bony ridge. It follows, then, that hypertrophies of the jaws being so common, and the cementum of the tooth partaking so closely of the nature of osseous tissue, we may look for frequent exostoses of the teeth. Garretson says (*System of Oral Surgery*, p. 904), that a thousand instances of hypertrophied cementum are found to that of one of any other osseous tissue, and the teeth are subjected to a thousand times the irritating influences of any other of the bones. In fact, so active is the investing membrane of the tooth-root, and so liable to irritations of various kinds, owing to the constant and often violent use of the teeth and their subjection to great and varied changes, that the cementum is never a fixed quantity, but it may be said to be always varying in amount. It undergoes constant absorption and redispotion. (Salter; *Dental Pathology and Surgery*, p. 129.)

The abnormal deposition of cementum is not dependent upon the vitality of the tooth pulp. In fact, it seems most excessive in teeth that have long been devitalized. Old stumps, from which the crowns have long been broken, frequently show an extraordinary growth. They seem to act as their own stimuli, and the osteoblasts, under the irritation of the mere presence of such roots, deposit upon them a layer that is out of all proportion to the original growth. Sometimes two fangs of a bicuspid or molar become united by an hypertrophic growth, the septum of true bone between them being all absorbed away. In the case of roots that have long been in an abscessed condition, it will be found that where the pericementum has been destroyed there will be no hypertrophy, but upon those parts of the root which still retain their attachment, a considerable growth will not unfrequently be seen.

The teeth which are the most subject to these growths are the molars and the bicuspid. It is somewhat singular that it is seldom

or never found upon the incisors. Why this should be the case it is hard to tell, for these teeth are certainly subjected to all the irritations to which the others are liable, yet they seem exempt.

The pressure produced by these extreme growths is sometimes very great, and only for the unusual mobility of the maxillary tissues it might induce serious results. There is, primarily, a thickening of the pericemental membrane, and this will, to a certain extent, raise the root from the socket and give room for the initial deposit. The continuance of the growth will induce an absorption of the bone, and thus a cavern will be formed in the maxilla, the space being occupied by the enlarged root. Occasionally the hypertrophy involves the maxillary sinus, and serious inflammation of the lining membrane of that cavity ensues, thus complicating the case and making the determination more difficult.

The diagnosis of exostosis is never entirely clear, unless it shall have proceeded far enough to become visible upon the surface. The pain accompanying it is seldom severe, but it is usually persistent and annoying. A sense of uneasiness is constant. There is commonly an increased sensitiveness in the pulp, if it be alive, and in the case of dead roots they are sore and irritable. Yet the annoyance is not so great or so well defined as to make the patient seek the dentist for relief, and in most cases only extraction, that may be said to be accidental, reveals the condition. In a few instances the enlargement is visible from the outside, and it is then possible to proceed as in other bony tumors. We may open through the plate of the alveolus, which in such instances is very thin, and with chisels, gouges, and engine burs, remove the excrescent growth. This operation will, however, seldom be called for, owing to the difficulty of making an exact diagnosis, and the fact that it is usually teeth not worth the interference that are affected with exostosis.

When the antrum of Highmore is involved by the growth, extraction presents the only practicable remedy. But it is very hard to determine when this is the case. There is little doubt that many obscure cases of antral disease, that persist despite judicious treatment, are due to exostosed roots of teeth, which penetrate the sinus. There is little to direct the attention of the dentist to such cases, unless an extensive opening shall have first been made.

It is always well in these instances to carefully examine the maxillæ for any signs of osteophytes or osteoma, for in certain stru-

mous diatheses exostoses are very common, and they may appear not alone upon the teeth, but along the border of the alveolus and upon the body of the bone.

In exostosed teeth the pericementum is always in an irritable condition, and this affords a slight clue in diagnosis. The tooth may appear a little elongated, or in case of a dead root it may be apparently pushed up out of its socket, but the feeling will not be as intense as in pericementitis.

Upon extraction of a tooth with an hypertrophy of the cementum, the pericemental membrane will be found in a highly vascular condition, though not so extremely congested as in pericementitis. It seems in a chronic condition of inflammation, and the thickening is at times considerable. It is this kind of low chronic inflammation, that affords us the most reliable indication in those cases which give no external sign of thickening.

There is a tumefaction of the jaw that sometimes succeeds acute periosteal or pericemental inflammation, which might possibly be mistaken for the thickening of exostosis. But in these cases there is no sensible line of demarcation. There is an apparent swelling of the tissue of the jaw, but it feels smooth and regular, with no definite edges. The swelling is also comparatively rapid in its growth, and is more apt to be tender to the touch. It is as hard and apparently as dense as the bone, but it usually disappears upon the use of the proper remedies. It is frequently the effect of acute pericementitis, but just what its character is has not been definitely determined. Garretson says that it is extra-, and not intra-maxillary, and is simply a periosteal exudate. (A system of Oral Surgery, p. 907.) But the extreme induration of such enlargements would seem to indicate a partial organization. This tumefaction is not infrequently found over the roots of teeth that have long contained large amalgam fillings. In those cases it is sometimes very persistent, but usually disappears upon the removal of the tooth. If the fillings be taken out and the pulp chambers and canals treated with some form of an iodine preparation, it will usually slowly disappear, being absorbed away.

I am not aware that any specific general medication has been recommended in cases of exostosis. The condition, though frequently the accompaniment of some cachectic state, is local in its nature, and only local surgical interference is called for in its treatment.

Reports of Society Meetings.

ILLINOIS STATE DENTAL SOCIETY.

REPORTED EXPRESSLY FOR THE INDEPENDENT PRACTITIONER.

Continued from page 372.

THURSDAY AFTERNOON SESSION.

Dr. Cushing, chairman of the committee on memorials, presented a sketch of the life and service of Dr. Isaiah Forbes, of St. Louis, one of the oldest of the honorary members of the society. Resolutions of sympathy with surviving friends were unanimously passed. Speeches of eulogy were made by Drs. Sturgiss, Black, McKellops and Taylor.

The subject of Operative Dentistry was again called up.

Dr. Green—Believes that one cannot properly fill a tooth without full command of space. Many of the old fillings inserted twenty years ago are still in good condition, and he feared that a smaller proportion of the fillings of to-day will be as perfect twenty years hence. The old fillings were usually inserted with a large amount of space around them.

Dr. Brophy—Has been surprised to see operators in the clinics attempt to fill teeth around a corner—to condense gold with a cork-screw. The only way in which a cavity can be successfully filled is to get positive and direct access to it. He has no faith in guess work. If he cannot see every part of the cavity, he does not fill. We do not, as a rule, polish the margins of the cavities sufficiently. When little projections and inequalities are left they are fractured, and the work thus unduly exposed. Small and fine stones should be used to polish the edges of cavities, and sufficient space should be gained to enable one to do this. Some new burs have been introduced, in coarseness between gold finishing and the regular cutting burs, and these are very useful. A filling should have its final examination under a high magnifying power, when all the imperfections, if any exist, will be exaggerated and recognized. We hear methods discussed and know that some of them are excellent. Then we go home and think of them no more. Dr. Black once demon-

strated how cohesive gold could be made non-cohesive. Much of the gold that is sold for soft is not so. It will not bear wedging, and will bridge over a cavity. We can easily make gold non-cohesive by exposing it to the fumes of ammonia.

Dr. Townsend—Sometimes a cavity extends beyond the gum, and it is necessary to see the cervical wall. This can only be attained by prolonged and very gradual wedging. Perfect contour cannot be obtained without patient wedging.

Dr. Stevens—I have never yet seen a tooth in which the pulp had been exposed and capped that was not dead. I know that many dentists are now capping pulps which never were exposed, and reporting successful operations. Capping to protect from thermal changes is not pulp-capping at all. Dentists are altogether too loose in their statement of cases. I have no faith in the transplanting of teeth. In extracting teeth I have seen the adjoining one loosened, but I do not believe that when the relations existing between tooth and jaw are once completely severed, they ever can again become normal. In filling teeth I do not put on the rubber dam until the rough work is done, and the excavation is at least partially made.

Dr. Dorn—A young man once came to me who had fallen on the ice and broken off both central incisors, the pulp of one being exposed largely, the other less so. I touched the exposed portions with a solution of nitrate of silver, and capped them with Dawson's mineral cement; six weeks later I removed a part of the cement, leaving enough for a cap. Both pulps appeared to be alive, and I completed the operation with contour gold fillings. Two years subsequently the pulps were alive, or appeared to be so.

Dr. Davis—It frequently takes considerable time to reveal the true status of such cases.

Dr. Sitherwood—Said that one of the most useful of the late devices that he had seen was the invention of Dr. Geo. L. Field, of Detroit. A lens, three or four inches in diameter, is by means of a series of universal joints attached to the chair in such a way that when the patient's head is in position it may readily be brought into proper focus over the teeth. The focal distance is such that it is quite out of the way of the patient, while it is between the eye of the operator and his work. It throws a flood of light into the mouth, besides magnifying the work so that any imperfection may be readily seen.

Dr. Barrett—Had seen the same device, and desired most strongly to commend it. To those who had reached middle life, and who began to feel the necessity for magnifying glasses, he thought this would prove a great blessing. Dentists abuse their eyes. Their work is very trying, and they do not use eye-helps as much as they should. The eyesight would be longer preserved if they employed magnifiers, and thus avoided unnecessary strain upon their vision. Besides, work is frequently imperfect because of microscopic defects, which only a glass will reveal. The magnifier of Dr. Field is very convenient, and may be swung into place and out as readily as the bracket table. It will serve all the uses of spectacles for old dentists, and magnifiers for young ones, while it has the advantage of never getting lost.

Dr. Stevens—I am astonished at the wonderful acuteness of vision of many dentists who speak of seeing the dental nerve without any magnifiers. It is something I was never yet able to do, in my life. I have seen exposed dental pulps, but never a dental nerve.

Dr. Black—Said that the normal function of the tooth pulp is not one of touch. There is no localizing sense, but the nerve simply conveys a sensation of pain alone. The main office is to give notice of thermal changes. When the tooth-pulp is excited, these alterations in temperature are exceedingly painful, and a hyperæmic condition is the result. The continued thermal shocks aggravate this, until there is such congestion that stasis of the blood current and death of the pulp results. To protect the tooth from these shocks he warms common red gutta-percha, and with the fingers moulds it about the affected tooth and the adjoining one. When cold, this is taken from the mouth and properly trimmed, and then replaced. In two cases out of three, by this means, pulps may be saved; at least that is his experience, and hoped that each one would try it and become convinced of its usefulness.

A paper was read by Dr. J. D. Moody, of Mendota, upon

POST GRADUATE STUDY.

A college training, said the essayist, is excellent, but the principal part of a man's education is that which he gains for himself, unaided by the schools. There are those who are longing for something higher, better, wider than that which professional colleges

give us, and to such a few suggestions will not be out of place. The medical training of the future is to be hygienic and sanitary, rather than medicinal. It may be so in dentistry, but before this there must be a change in some of our methods of instruction. Have we, as dentists, laid the necessary foundation structure for a true scientific course of study? Two years is not enough for this. Clergymen spend four years in college and three years in a theological seminary. Medical men require quite as much for professional study, and can a dentist worthy of the name be made any quicker? A true student must have something more than mere desire for the acquisition of strictly professional knowledge. He must be prepared to investigate scientific fields for himself, and not always to receive his knowledge at second-hand.

There are few men who can do good and original work before they are forty years of age. Previous to that the judgment is not sufficiently matured, the experience is too limited, and the faculties of observation are not enough trained. Our part of the field of science is constantly widening, yet careful reading of our journals shows that but few new names have come to the front within the last ten years. The growth and multiplication of the lower forms of life offers one of the very best fields for study conceivable. Let us look for a moment at the literature of this branch of science. No name shines with a brighter lustre than that of Dr. W. D. Miller. If I take up a volume of the *INDEPENDENT PRACTITIONER* and read one of his articles, I see at once, that to properly comprehend them something besides mere mechanical training is demanded. I must have a degree of familiarity with the fundamental truths of science, and I must be fully up with the latest medical facts and theories. If I read Dr. Black's book on "Poisoning by Micro-Organisms," I must, for its understanding, have some previous training, and a knowledge of the basal facts upon which it is founded. If I read Dr. Barrett's articles on "Nervous Force," I shall not be edified if I do not comprehend some of the principles which govern the correlation of forces, and have some knowledge of what force is. If I take up Dr. Abbott's and Dr. Bödecker's studies of the pathology of the tooth, I must have some previous knowledge of tooth structure or I shall obtain little benefit from them. It is the same with all technical writings. It needs a general knowledge of physics to enable one to comprehend papers on any philosophical subject. If a man makes

the best use of his time, the minutes spent between twenty-five, the age of graduation, and forty, the year of best development, will thoroughly prepare him for original investigation in almost any field.

In the consideration of this subject, and to aid in the preparation of this paper, the author had corresponded with a number of men prominent in dentistry, and had asked what, in their opinion, would be a proper subsequent course of study for those who had graduated at a dental or medical college. The answer had been crystallized into the following scheme, which might be pursued in such order as the student found most practicable. It does not pretend to be perfect, or entirely comprehensive, but it will at least be suggestive:

1. Physics: Molecular and Mechanical.
2. Electricity and Magnetism.
3. Chemistry: Organic and Inorganic, with Chemical Physics.
4. Metallurgy.
5. Microscopy: Technical only.
6. Zoology: Invertebrate Morphology.
7. Botany: Systematic.
8. Anatomy: Human and Comparative.
9. Embryology.
10. Odontology: Comparative.
11. Histology: Vegetable and Animal.
12. Physiology: Vegetable and Animal, with Chemical Physiology.
13. Bacteriology.
14. Pathology: General and Dental.

A working knowledge of these branches could not be obtained in less than fifteen years; so at forty a man should have a good practical knowledge of these subjects, and at that age he would be prepared for earnest work. Unless we comprehend basal principles, we are not prepared to practice any profession other than empirically. We must make study attractive. Our work should appeal to the intelligence rather than to the sordid side of our natures.

How shall such a course of study be carried out? A special school with a higher degree would require five years of special study, and this few can afford. The lack of a plan has been felt and expressed in many ways. To meet such a want this paper has been prepared. The most practical plan and that which promises

the most advantage, would seem to be a post-graduate correspondence school, which would not demand that students should leave their homes. Competent instructors should be designated and new books must be prepared, for we have not the proper text-books. The work would be guided by correspondence with the tutors, only one or two studies being pursued at once and the time unlimited. Then, upon the completion of the course, a degree should be conferred, and for this he would suggest D. D. Sc., or Doctor of Dental Science.

Who shall organize such a course? Our best educators. The full benefits would mostly accrue to the young graduate, but all would reap advantages.

The discussion was opened by Dr. C. N. Johnson, who said: The chief objection to such a scheme is that the members of our profession have not a sufficient general education. To properly study such technical subjects requires some knowledge of ancient languages, as the nomenclature of science is mostly derived from the Latin and the Greek. Very few of our men are classical scholars. They have not the mental training for such work. We are not old enough in scientific knowledge and culture. If a special degree is to be instituted, we need one that is not so near like the present dental degree. A scientific and not a professional diploma should be given. The list of studies is a good one, and the arrangement is excellent. The placing of the study of Vegetable Physiology before that of Animal is especially to be commended. The most of us have more time than we think we have. Those who really should have the most leisure are the ones who complain of lack of time, because they have not learned systematically to economize their moments. We do not usually operate more than eight hours. One hour for study each day would not be much, but in a week this will give us a very good day, and in a year it proves a great aggregate. In a lifetime, one hour's judicious study each day will make of almost anyone a scientist. Adjourned.

THURSDAY EVENING SESSION.

After the transaction of the usual routine business, Dr. J. G. Templeton, of Pittsburgh, as a delegate from the Pennsylvania State Dental Society, presented the fraternal greeting of his brethren, and extended an invitation to the members to attend the next annual meeting at Cresson.

Dr. Brophy moved that Dr. Harlan be invited to present before the next meeting the new remedies described in his paper, and such old ones as he may deem best, that members may become familiar with them.

Drs. Brophy, Swain, Kitchen, Marriner and Cushing were appointed a committee to take into consideration the devising of some way to render Dr. Black assistance in his investigations, and to enable him to devote his entire time to that work.

Dr. Black made his regular report, as follows :

Last evening I made a number of plants in illustration, and I have one that seems to be pure. Four other tubes are sterile. The one which succeeded is *Streptococcus magnus*, which we find so abundant under artificial plates. I planted a number of gelatogens, or gelatine-forming bacilli. You see that I can turn this tube, the bottom side up. A cap of gelatine has been formed that makes it appear as if it were all solid. In a week or so the gelatine will become red, and in a short time longer this will liquefy and be filled with round spores. Those gelatine-forming bacilli give to the teeth a gummy appearance.

Here is a tube of caries fungus, planted three days ago, and to make the illustration complete, we will take a tube of control matter and mark the difference. You will see that the control is neutral, while the infected solution is strongly acid. As a further illustration that this acid is formed by caries fungus, I will show a plant made yesterday by passing the sterilized wire between the lips of a young lady. You note the difference. My principal object in making these cultivations before you is to render you familiar with some of the foundation facts in oral bacteriology and pathology.

The discussion of Dr. Moody's paper on Post Graduate Study was then declared in order.

Dr. Barrett—Said that it was very seldom that a society was privileged to listen to so thoughtful a paper as was this. It was far-seeing, for it looked to the future of our profession. If we are to be indeed a scientific body, we must not always be engaged in the study of applied science. We may become skillful mechanics and accomplished operators, but that will not make of us scientific men. A physician may be a thorough physiologist and anatomist, well versed in materia medica and pathology, an acute diagnostician and an accomplished practitioner, but all that will not give him standing

in the world of general science. He must have made some advance in abstract study. He must have investigated pure science and completed some original investigations if he would be known among scientists. We are good *dentists*, but that does not necessarily mean that we are philosophers. This cry of "no time" for reading and study does not come from the leading men in dentistry. Look about you and see who are the men of the greatest general labors—men who occupy leading positions and who do the most for their profession, men of culture, who read all the dental journals and books, and you will find these are the men with the largest practice. There is leisure enough in dentistry, but is there the disposition for study? Is there the general enlightenment and classical training to make such a course as this practicable? That remains to be seen. At any rate, the effort to establish such a course is highly commendable, and ought to succeed, whether it does or not.

Dr. Black—I was much interested in this paper. It is not necessary for me to commend it. I wish to emphasize another point. Few men have any just appreciation of the amount that may be accomplished if one hour of each day is devoted to systematic study. It will be sufficient of itself to make a wise man. It will develop the mental faculties and resources to a degree that will surprise anyone. Whether or not you choose to follow this or any other particular scheme, give one hour each day to regular systematic study, and when you have become interested you will give more.

Dr. Sitherwood—I have listened to no paper that has so interested me, and hope that this subject will not be dropped, but that a committee will be appointed to devise something akin to the Chautauqua Literary Course.

Dr. Harlan—Like the other members, I listened to Dr. Moody's paper with great interest. Most young graduates do not appreciate the necessity for further study until they find themselves in the rear of their profession. Until recently there were no facilities for post graduate study, but now there are institutions where one may pursue any desired plan of investigation. Every man should have some special field in which he shall be constantly engaged in study, and if it be only the collection of curious epitaphs, it is better than no study at all.

Dr. Kitchen—If members of this society had never studied any-

thing but red-rubber and amalgam, they would not have made the progress they have. I hope that we shall, as a society, engage in some specific plan of original investigation.

Dr. Brophy—The National Association of Dental Colleges has appointed a committee to take into consideration the supplying of the profession with a complete set of text-books.

Dr. Barrett—That would seem to imply that it was only from the ranks of the teachers that we were to expect books, while the history of the literature of the world teaches us that the best books come from the most unexpected sources. It is very seldom that a great book is the result of the definite appointment to the task of even the man whom all the world agrees is most competent to write upon any special subject.

Dr. Moody—In closing the debate, said that this subject of scientific study had been near his heart for a long time. He deprecated any hasty action. The work should be a national one, and he had brought the subject up that it might be duly considered. It is true that we have not the training now to do real scientific work, but we must educate ourselves. We have not to-day a properly prepared dental text-book. In anatomy we have only Gray, a book of many hundred pages, and it is absurd to put an untrained mind to the study of such a work as this. We have not the basal principles tersely laid down in dental books, and one of our greatest needs is better text-books.

A paper was read by Dr. J. G. Reid upon

ORAL CHEMISTRY.

Instead of sharing the general progress of dental science, said the essayist, dental chemistry seems to be advancing rearward. This seems to arise from a lack of interest in the subject and because other fields are more inviting. Attention is directed from it by the ascribing to physiological and pathological changes those which should be studied in connection with chemistry. Yet the microscopist needs the aid of the chemist, and there is a vast field opened for the labor of the dentist in the studying of the condition of the fluids of the oral cavity.

The saliva is the principal fluid of the mouth, and that is incapable of exercising any deleterious influence upon the teeth. In its normal condition it is either entirely neutral or possessed of a

slight alkaline reaction. If it be found acid, it is an indication that it has undergone some chemical change, not through its normal constituents, but because of the introduction of something from outside. During childhood and youth its condition is usually constant, and its chemical state neutral, or nearly so. There has never been a thorough chemical analysis made of the fluids of the mouth in diseased conditions to ascertain exactly what acids are present. Miller determined lactic acid, but previously there was no knowledge of what the acids were. When we come to examine the process of fermentation and the result of this process, we can scarcely refrain from exclaiming "Eureka."

The chemists of the sixteenth century were the first to notice fermentation. At the present day the physiological chemists are minutely examining this mysterious action, and they find therein the key to much that had previously been unaccountable. Observers have recorded that they found albuminoid matter in great quantities in the saliva as found in the mouth, and the saliva was acid, but they do not tell what was the acid found. An examination into all the conditions will convince us that in most cases this is undoubtedly lactic acid. (The essayist reviewed the conditions under which these acid changes must take place, and showed that it may be, and usually is, lactic acid.)

Lactic acid fermentation is much more active in the carbohydrates, because it is produced at the expense of the sugar. The sugar that is produced from amylaceous substances by the ptyaline of the saliva, is probably in a more favorable condition for lactic fermentation than that which may be introduced from without. This fermentation, it might naturally be supposed, would be more active in the sheltered pockets between the teeth, for here the food may remain for some time undisturbed. The sum of the whole is this:

1st. Dental caries is more active during childhood and youth, as the mouth is not kept in as cleanly a condition, and because the oral secretions being in a neutral or alkaline condition, fermentation is more active.

2d. The presence of fermentable products being generally constant, lactic fermentation proceeds uninterruptedly for an indefinite length of time.

3d. Lactic fermentation, as a rule, precedes other fermentations.

4th. The points of fermentation and decay are coincident.

5th. The acids produced are dilute, but being constant their action is finally destructive. Adjourned.

FRIDAY MORNING SESSION.

Dr. Black reported as follows:

I brought my microscopical garden to this place with some misgivings. My object was to make you more familiar with the fungi of the mouth, and that the subject might not seem to you afar off. I wished to convince you that the demonstration of these fungi is not a mysterious process, but that it is as simple as any other gardening. It is merely the raising of vegetables. We get poisons and medicines from visible plants, and we may get the same from microscopical ones. In the progress of the work here I have succeeded better than I had anticipated, The air has not been pure and there has been consequent contamination, but I have succeeded reasonably well. I have made forty-one original plants or impregnations. Out of these I have had thirty-seven growths. Nine are practically pure cultures of caries fungi. The other growths have been impure. I have demonstrated to you the acid-producing power of fungi, and the fact that acids cannot be produced without the presence of sugar or starch. The microscopical exhibition has been a disappointment. Not enough of instruments or lenses have been presented, and it will take time to appreciate the importance of this branch of dental science. The usual lenses for histological work will not answer. We need the modern homogeneous immersions. I have had but one such, and the exhibition has therefore been somewhat restricted. Next year I think we shall do better. We hope to learn something during the year, and to grow into an appreciation of the importance of the subject. The results of the growth of most of the fungi are unknown. We have studied but a few. I have spoken very little of their location or habitat. There is a great field open and inviting, in the careful study and tabulation of the results of observations of fungi of the mouth.

Dr. Davis—Are these organisms purely vegetable, or animal; and if they are the former, what does Dr. Watt and others mean by speaking of the "bug theory?"

Dr. Black—They are vegetable, and the instances referred to are an indication of ignorance, when honestly applied. When not, it is intended to throw ridicule upon scientific research of this kind.

Discussion of Dr. Reid's paper upon "Oral Chemistry" was declared in order.

Dr. Black—This paper is interesting and timely. We have done much work in this field, but we have commenced at the wrong end. The progress in Oral Chemistry has not been commensurate with the labor bestowed. The paper indicates a general progress, and the prospect of better work in the future.

Dr. Taylor—There is one point that was not made clear. The author speaks of the acids produced by the fungi, but pays no attention to mineral acids. People often make the remark that they have taken so much medicine that their teeth are ruined. It is not the medicine which is in fault, but because of the cause for taking the medicine—the constitutional condition. It is not usually the acids which are to be blamed, but the general tone of the system.

Dr. Townsend—We have been taught that the injury to the teeth during typhoid fever is due to drying of the saliva, and to acid changes.

Dr. Black—When, in typhoid fever, the teeth become coated with gelatine-forming fungi, we know that acid formations are active. Alkaline micro-organisms sometimes get control, and then we may not have decay of the teeth, although they are gummed up.

Dr. Townsend—Have you ever examined the sordes of fever?

Dr. Black—I have not, but it is probably due to micro-organisms.

Dr. Taylor—If I understand Dr. Miller aright, all decay is not due to fungi.

Dr. Black—It is not possible that mineral acids should produce decay. If they be in sufficient strength to affect the teeth they would destroy the organisms, and caries of the teeth is *never* present without them.

Dr. Ottofy—Why is it that with some decay there is an alkaline reaction?

Dr. Black—I have never seen such a condition, save where the fungi are dead and decay is stationary—is not progressing.

Dr. Ottofy—Is decay never progressing when the mouth is alkaline?

Dr. Black—No, sir; most emphatically. In such conditions decay has ceased for the time. In every case where pus is forming and being discharged, decay has ceased.

Dr. Harlan—The most important points made in the paper are

confirmatory of Dr. Black's opinion, that the lactic ferment which is most powerful in producing the dissolution of the tooth is due to organisms, and that its formation precedes the carious process.

Dr. Moody—We are too apt to drop a subject when it has been but partially worked out. I hope that Dr. Reid will not cease his labors, but that next year he will be prepared to give us the results of further study.

Dr. Kester—The works upon dental chemistry are few and not recent. This paucity of our literature is due to a lack of demand. Such papers as this will create a desire to know more. Dr. Moody has shown the necessity for study of basal principles, and it would seem that this meeting marks an advance. We have in the mouth all the factors of chemical action—the fermentable substances and the ferments. Here is a great field for study. I fully agree with Dr. Black, that mineral acids play no part in dental caries.

Dr. Cushing—I know little of chemistry, but I wish to emphasize the remark that we should encourage the study of this field by men like Dr. Reid, and the Executive Committee should see that the subject is continued. We are upon the threshold of important discoveries. Scientific investigation is but in its infancy, and it is gratifying to know that with such slender encouragement so much work has been done.

Is it a fact that the excessive use of sugar acts disastrously upon the teeth, and if so, is it not because it furnishes food for micro-organism, rather than because it is injurious of itself? I have seen destructive effects from the use of acid confectionery. Are these results also due to micro-fungi? We are constantly asked by parents if candy and confectionery are injurious to the teeth of children. My answer has been that they are not, if the mouth be cleansed after their use.

Dr. Black—It seems certain that the indulgence in sweets will vitiate the fluids of the mouth, even though the utmost cleanliness be observed. It will entail a loss of appetite and certain general disturbances. Aside from this, sweets are not injurious. With sour-drops there is a large amount of acid, but I think ill effects are due to constitutional disturbances. Sugar is not injurious to teeth. Magitot placed teeth in a solution of sugar, and at the end of two years they were found perfect. But when fermentation proceeds the teeth are destroyed.

Dr. Swain—Is there not the same danger from starch as from sugar?

Dr. Barrett—Dr. Black is correct in the scientific aspect of the case. It should be borne in mind that some sugars are fermentable and some are not. One of the best preservatives that we have against putrefaction is cane sugar. With it the housewife prepares her fruits and the butcher his meats. Sugar cured hams are famous the world over. It is not stated what kind of sugar Magitot used to macerate his tooth in, but it must have been cane sugar, and using that he was simply laboring to prove an axiom. Of course it will preserve a tooth, and any school-boy might have told him so. But grape sugar is a fermentable sugar, and this aids tooth destruction. The difference between sugars—cane, grape, milk, and liver sugar—is something incomprehensible. Their chemical formula is the same, and the difference is allotropic. Cane sugar may be converted into grape or vegetable sugar, and then it is fermentable. The organisms of which we have been speaking are capable of converting sugars. Starch, which forms by far the greater part of all our vegetable food, is not digestible as such. It must first be converted into glucose or grape sugar, and this is done with all our amylaceous foods. Cane sugar then, would of itself be preservative of the teeth. When we speak of the presence of sugar in the mouth we do not refer to the usual sweetening of the housewife. Grape sugar or glucose is meant, and this is formed by the conversion of starch, or the farinaceous principles of vegetables. Candy is made largely of glucose or grape sugar, and this part of it would be directly fermentable. It is also more nutritious than cane sugar, though its flavor is not as pleasant.

Dr. Cushing—I wish to know if any sugar can be directly injurious.

Dr. Black—Sugar is not injurious without organisms.

Dr. Barrett—The point that I desire to make is that cane sugar cannot be more injurious than starch. The process of conversion of each into a fermentable sugar is essentially the same.

Dr. Noyes—It is time that we began to differentiate concerning decay. There is destruction by more than one method. Acids are formed by cells of mucus membrane as well as by organisms, but until the caries fungi take possession the carious process does not really begin.

Dr. Reid—I appreciate the importance of this subject, and am gratified at the attention which it has received. I will endeavor, if possible, to continue the study.

Dr. Noyes moved that the subject of Oral Surgery be taken up, and as the essayist was absent that Dr. Brophy be invited to open the discussion.

Dr. Brophy—Many remarks made here would lead to the impression that this, too, is a subject that should receive more attention at our hands. Dr. McKellops has referred to *incurable* alveolar abscesses. Why are they so? It is because of destruction of the alveolus and the deposit of seruminous matter about the root. What is the method of cure? Usually extraction, but any operator should be competent to treat those cases without resorting to that. Cut out the diseased tissues and the carious bone, which is always present. There is a cavity at the end of the root, and this is filled with some form of deposit. Dr. Black has shown cases in the past in which the alveolar plate of one entire side had been removed, and yet a new one had formed. I have removed everything from the lateral to the second molar, and yet under careful treatment the whole was restored, and the teeth returned to usefulness.

Dr. Ames—In the case of an important lateral incisor, like that spoken of by Dr. McKellops, there would seem to be no necessity for sacrifice. I am sorry that he has returned home and is not present to tell us more about it. If a portion of the root be amputated and patience be exercised, the tooth should be saved. In my own limited experience I have a number of times seen the root denuded, and after amputation the case got well. It is sometimes possible to dis-tend a fistula by means of sea-tangle tent, or compressed sponge, until access can be obtained to the root.

President Gilmer—Drainage is sometimes a very important matter.

Dr. Ames—The braided horse-hair tube is the best, as the tissues do not grow into it and stop it up.

Dr. Brophy exhibited photographs of a small patient whose features were eaten away in a horrible manner by syphilis, the inoculation having been from the pipe of an old sailor, which was borrowed for the purpose of blowing soap bubbles. The hard palate, the turbinated and the nasal bones, much of the nose, both lips and most of the teeth were gone. There was ectropion of

three-fourths of an inch. The boy is improving under treatment, and in time Dr. Brophy hopes, by means of a plastic operation, to naturally ameliorate the condition.

THE RETENTION OF DEAD TEETH IN THE JAW.

The regular essayist, Dr. Homer Judd, was unable to be present, and Dr. Edmund Noyes, at one day's notice, had prepared a paper. He said that an enormously large number of dead teeth and roots are now saved by the dentists. They are filled, crowned, and bridge-work is built upon them. The time has come when people have an exaggerated opinion of the abilities of the dentist. Some practitioners foster this idea by asserting that they never extract teeth. Every pulpless tooth is in an abnormal condition. The most favorable cases for the retention of dead teeth or roots are when, with a good constitution and good teeth, one of them is devitalized and properly treated and filled. In such a case the cicatrix at the foramen is too small to give trouble. Such a tooth in such a mouth will be thoroughly innocuous.

The Medical Record once suggested that physicians might find it necessary to order dentists to remove dead teeth. The physician cannot from his own knowledge designate any such. He does not know the condition or symptoms. The common cause for unsuccessful treatment of dead teeth is imperfect and faulty manipulation, and the difficulty in determining the exact condition without resorting to extraction. A chronic state of pericementitis may result from the last point of the root remaining unfilled, and this in time may make an impression upon the general health. Another difficulty may arise from the calcification of pulps previous to devitalization, and this may prevent the perfect filling of root canals. Another source of irritation may be the naturally sharp point of the root. A long continued abscess may bring about this condition, and there may be rough nodules and calculi. Large pulps, in decomposing, may destroy the dentine to so great an extent as to make the whole tooth a source of irritation.

The first indication of disturbance from a dead tooth is usually at the apex. Pain may be caused in almost any tissue, from reflex disturbances arising from a dead tooth. Eye, ear, stomach, and uterus are especially liable, although it may be that this frequency is only apparent because it is more easily recognized. Toothache

may also arise from diseased eyes and ears, etc. It is not surprising, then, that eye and ear surgeons are quick to recognize disturbances arising from the teeth. Their observations should be intelligently made, for it is not infrequently the case that some aural disturbance is attributed to a tooth, when extraction does not prove a cure.

In cases of continued alveolar abscess the formation of pus is the most alarming symptom, as it will, in some cases, produce serious drainage to the system. There is much in the constitutional condition which governs the state of dead teeth in the mouth. With some patients abscess is almost certain to supervene when a tooth is devitalized, while with others it rarely occurs. Abscesses sometimes open into the nares or antrum, and retention is incompatible with a state of health. The retention or extraction of dead teeth must be determined like any other surgical operation. The circumstances and probable danger must decide the question.

Dr. Cushing—One of the difficulties in the way of saving pulpless teeth is that it is impossible to reach perfection in the filling of roots. Many imperfections escape notice, many are inherent in the tooth, and yet the cases are measurably successful. When we seek for underlying principles, there is little analogy with general surgery. It has been said that we come here to discuss basal laws, and not to relate incidents. All practice is more or less empirical. When it becomes scientific it is because of empirical experimentation. The argument that has been made by medical men would direct that all dead teeth should be extracted for fear of possible bad results, because evil consequences have been observed from the keeping of diseased teeth in the mouth. Such arguments simply point out the ignorance of medical men as to the possibility of treating diseased teeth and restoring them to healthfulness. The instances of the obliteration of tooth-pulps, which the essayist cited, are strong arguments in favor of the possibility of keeping dead teeth, provided they are in an aseptic condition. We must rely upon the tendency of the body to tolerate abnormal conditions. General surgery is founded upon this toleration and adaptability of the human tissues. There are depraved conditions under which the simplest lesions become fatal, but because this is the case we are by no means at liberty to conclude that no surgical operations are warranted. Even though some dead teeth are provocative of trouble, it does not fol-

low that dentists are never justified in treating and filling teeth with devitalized pulps.

Dr. Barrett—When a tooth is said to be dead, there is really but one of its tissues that needs protection. The enamel is practically without nourishment. The cementum has still its source of nutriment in the living periosteum. The dentine only is deprived of its normal connection. But even that tissue is isolated and cut off from all other outside tissues, being only in relation with the inert enamel and the living cementum. Its inner surface alone, that towards the pulp, is in its new relation cut off from its normal connection, and it is only from this pulp surface that it is liable to attack. If this face of the dentine be fortified against septic conditions, there can be no ill effects from that dead tooth. How may this be done? By removing all fermentable matter, rendering the cavity and its parietes entirely aseptic, and thus hermetically sealing this cavity against the intrusion of ferment or putrefactive germs or organisms. Make the cavity aseptic by the use of deodorants, disinfectants, germicides or antiseptics, which ever may be demanded, and then seal the foraminal opening with a material that shall be perfectly adaptable to all the inequalities, bland in its character, entirely neutral chemically, a simple substance rather than a complex compound that may possibly be decomposed, non-metallic as being least affected by thermal changes, and one that will be readily tolerated by the tissues. These varying qualities are best found in one of the natural gums—a hydro-carbon rather than a resinous gum—and of all these gutta-perch seems the best adapted. Filling the pulp canals with this material then, and the external cavity with a simple metal like gold or tin, it would seem that the most essential conditions had been met, and such a tooth in a healthy mouth should remain for an indefinite time entirely innocuous.

The society proceeded to the annual election of officers, with the following result:

President—W. T. Magill, Rock Island.

Vice-President—C. B. Rohland, Alton.

Secretary—J. W. Wassall, Chicago.

Assistant—Louis Ottogy, Chicago.

Treasurer—T. W. Pritchard, White Hall.

Librarian—W. B. Ames, Chicago.

Executive Committee { E. J. Green, Peoria.
W. H. Taggart, Freeport.
P. J. Kester, Chicago.

Board of Examiners { Garrett Newkirk, Chicago.
E. D. Swain, Chicago.
G. D. Sitherwood, Bloomington.

Jacksonville was selected as the next place of meeting. The regular bills were ordered paid as follows: Ordinary expense, about \$75.00; Secretary's salary, \$100.00; Assistant Secretary, \$25.00; State Board of Examiners, \$200.00; Stenographer, \$125.00. The society then adjourned to meet in Jacksonville, the second Tuesday in May, 1887.

DR. WILHELM HERBST'S VISIT TO AMERICA.

REPORTED EXPRESSLY FOR THE INDEPENDENT PRACTITIONER.

At a meeting of the First District Dental Society of the State of New York, held in April, 1885, the Society extended an official invitation to Dr. Wm. Herbst, of Bremen, Germany, to come to this country and give clinics. Dr. Herbst sailed from Bremen on the steamer *Aller*, June 19th, 1886, and reached New York on Monday, June 28, 1886.

At the June meeting, the President, Dr. Wm. Carr, appointed a reception committee to make arrangements for the official reception of Dr. Herbst, and Drs. C. F. W. Bödecker, Frank Abbott and Wm. H. Atkinson were appointed, together with the President, Dr. Wm. Carr. They decided to give Dr. Herbst a reception and dinner on Friday, July 2d, at Mazzetti's, 867, 6th Avenue. In the meantime, Dr. C. F. W. Bödecker had invited the Professors of Operative Dentistry of every College of the country, as well as a few friends from New York, Brooklyn, Buffalo and other cities, to meet Dr. Herbst at dinner, at Dr. Bödecker's residence, No. 60 East 58th Street, on Thursday, July 1st. The gentlemen present were Dr. Wm. Herbst, of Bremen, Germany; Dr. Richard Schreiter, of Chemnitz, Germany; Dr. H. J. McKellops, St. Louis, Mo.; Dr. F. H. Rehwinkel, Chillicothe, Ohio; Dr. E. T. Darby, Philadelphia; Dr. C. N. Pierce, Philadelphia; Dr. S. H. Guilford, Philadelphia; Dr. R. R. Andrews, Cambridge, Mass.; Dr. F. A. Levy, Orange, N. J.; Dr. C. S. Stockton, Newark, N. J.; Dr. Wm. Carr, New

York; Dr. Frank Abbott, New York; Dr. Wm. H. Atkinson, New York; Dr. A. L. Northrop, New York; Dr. E. A. Bogue, New York; Dr. Wm. H. Dwinelle, New York; Dr. N. W. Kingsley, New York; Dr. Benjamin Lord, New York; Dr. S. G. Perry, New York; Dr. J. B. Littig, New York; Dr. O. E. Hill, Brooklyn; Dr. Chas. D. Cook, Brooklyn; Dr. Wm. Jarvie, Jr., Brooklyn; Dr. W. W. Walker, New York; Dr. Carl Heitzman, New York; Dr. E. P. Brown, Flushing, L. I.; Dr. C. A. Timme, Hoboken, N. J.; Dr. Ch. Degenhardt, New York; and Mr. E. W. Reuling, New York.

After Dr. Bödecker had spoken a few words of welcome to the guests in general, he presented Dr. Herbst to the assembled company. Dr. Wm. Kingsley then welcomed the honored guest of the evening, and Dr. Herbst responded in German, which was translated by Dr. Bödecker.

Dr. Herbst remarked, that he had not come to this country with anything but hard work in view. He was overwhelmed with joy when he found that at last he had met with candid and straightforward men, who would do justice to the child he desired to entrust to them. When this child (the rotation method of filling teeth) was born, his colleagues in Germany pronounced it unfit to live, and condemned before they had examined it. While in this dilemma, he heard of a well-known American doctor, who proposed to come and examine the bantling. This gentleman was Dr. Bödecker. He gave a critical examination of the infant for one week, and finally pronounced it to be a very healthy boy indeed, declaring that no one would be able to kill it in Germany, and he would try to introduce it into this country. How far Dr. Bödecker has kept this promise you all know. I will only state that, without him, the baby would have died. I am not vain in my expectations, but only hope that you, gentlemen, who stand at the head of the dental profession, and whose names are familiar to almost every dentist in the world, will look at my baby. I shall submit it to your judgment, and if found worthy I shall rejoice with you. I will also be very happy if you will accept the training of it. There is another well-known American child, whose father sits here at my right (Dr. Wm. H. Atkinson), and to him the mallet owes paternity. If you do not, therefore, wish to accept my child alone, then I propose to give it in marriage to that of Dr. Atkinson. Let the rotation method and the mallet be united.

Dr. F. H. Rehwinkel responded, saying that he was very glad that the child was alive, and had come to live in this country. He had always taken a very great interest in the baby, and had therefore come all the way from Ohio to make the acquaintance of both father and child. He knew that the latter had been very badly treated in Germany, that the dental profession would not even look at it, but he was confident that the American people would do justice to anyone. He believed the rotation method a good thing, and knew that the dental profession of this country is only too glad to take hold of anything that is new and good, whatever may be its origin.

Dr. H. J. McKellops said that he was one of the veterans of dentistry. He had seen very many clever fellows, and Dr. Wm. Herbst was one of those whom he delighted to honor. He had made the long trip from St. Louis, and was happy to say that he had been more than repaid for the trouble. If he had seen nothing but the exhibition by Dr. Herbst of the making of a golden nerve-broach, he would have been abundantly satisfied.

A clinic was given in the office of Dr. Bödecker, when Dr. Herbst filled (for a dental student) the right upper second bicuspid, which was very badly decayed. The cavity extended into the distal and grinding surfaces. Before Dr. Herbst began to excavate the cavity he adjusted a matrix of German silver, which was made in the following manner: One end of a thin piece of this metal, about No. 32 American gauge, one-quarter of an inch in width and one inch and a half in length, was pressed between the first and second bicuspid, while the other end was placed between the second bicuspid and first molar, encircling the entire second bicuspid. Then a forcep with blunt cutting edges, made expressly for that purpose and somewhat resembling a pair of ordinary flat-nosed pliers, was applied, and with this the piece of German silver was tightly compressed around the tooth. It was then withdrawn and soldered together with soft solder. After this was accomplished the cavity was prepared in the usual manner, the rubber dam applied, and the matrix put back in its former position. The matrix was made before the excavation was commenced, that the walls of the cavity might be cut away to any amount without losing the contour of the original tooth.

After the matrix had been replaced and the cavity disinfected

and dried as usual. Dr. Herbst inserted a few pellets of tin against the cervical border of the cavity, and these were followed by large gold cylinders, which were compressed by a piece of cotton loosely placed over them and pressed down by a hand burnisher, and this followed by an engine burnisher. When thus thoroughly compressed the gold was further condensed into every detail of the cavity by a roof-shaped Herbst instrument in the dental engine, after which a fine exploring instrument, No. 5, was used to see whether the gold had been perfectly packed into every part of the cavity, and in this way layer after layer of gold was added until the entire cavity was filled. The gold used was Wolrab's German cylinders, but at the closing of the operation, Wolrab's No. 10 foil was employed, and this was prepared by cutting one sheet into eight strips, and rolling each up loosely between the fingers.

Dr. McKellops examined the filling very carefully, and found it perfect in every respect. He then expressed his gratitude to Dr. Herbst for his generosity in neglecting his practice and family to come over to this country in order to show his inventions.

Dr. Wm. H. Dwinelle spoke as follows: Gentlemen, Dr. McKellops is my inspiration. After what he has said, I cannot but speak. I am willing to put faith in his new experience and his judgment, enough at least to investigate in all fairness this new system of filling teeth. I am willing to accept new ideas from any source, but will lay aside old ones, only when by the severest tests they are bettered by the new. It is folly to assume that the goal of human progress has been reached and that no further improvements or discoveries can be made. This is simple arrogance and assumption; so when ingenious and honest men, like Dr. Herbst, come among us and generously propose to demonstrate the genuineness and practicability of their discoveries, we are bound in all fairness to give them the opportunity to do so, whether we approve of and adopt them or not. In this spirit we welcome Dr. Herbst. Let us hail him as one of our co-workers, a man of genius, as he certainly is; as an inventor; as one of the prophets and poets of our profession, for I claim that the inventor is the prophet and poet of his time. The true poet looks with the vision of inspiration into the future, and with his far-reaching ken anticipates the slow, plodding unfoldings of time. The inventor, too, is often the philanthropist of his day. He often lives before his time, and as fre-

quently is called a fanatic and a dreamer: "but time at last sets all things even," but with many great inventors, not until they have been long in their graves.

We, as a profession, are an army of inventors. We are inventing from morning till night. It is said that "Necessity is the mother of invention." Bless the good old mother that she so continually surrounds us with such stern necessities, and then obliges us to invent ourselves out of them. I think if all of the practical inventions made by dentists from day to day—most of them in passing, soon forgotten—were sent to the patent office, it would be overwhelmed and retire from business.

You know, gentlemen, I have ever been an advocate of finely attenuated instruments for filling teeth, even the ultimate point, and for instruments of such angles as will enable us to reach every remote and hidden wall, and hermetically to seal every frail and delicate joint. I have assumed that complex operations necessarily must be slow operations. I have said that rapid operators are often apt to be poor operators, so I must accept with caution a system which at first sight seems to be in opposition to the one I have so long practiced.

Dr. McKellops states that by the Herbst method you are not only enabled to fill teeth that will withstand all of the tests that the best operation will endure, but that they can be performed with great facility, reducing the time from one-half to one-third. If this is so, it is a "consummation devoutly to be wished."

The fact that Dr. Herbst uses soft and mellow gold for the sealing of the joints of his cavities, is certainly in favor of their being more thoroughly done than it would be with the use of adhesive gold. I have seen many of these showy adhesive foil fillings lately. Some of them were well executed in the center of the mass of gold, but the borders on the joints of the fillings were full of minute holes, which, though small, were sufficient to destroy the teeth, as a small leak will sink the largest ship.

I am also impressed that Dr. Herbst has seemingly developed a new principle in gold, whereby by the continued rotation of proper instruments under pressure, he not only induces adhesion of the constantly accumulating gold, but he seems to enforce and expand it, so to speak, until it reaches and solidifies against the remotest walls, and closes the joints even to their angles. This may be a new principle; at any rate it is worth the study it invites.

Let us try the new system cautiously and conscientiously, and accept its teachings in all fairness. I do not think such old fogies as myself will ever adopt it in full, but I would not be surprised if it would greatly facilitate and supplement our present methods.

All rotary instruments must of necessity be direct in their action, consequently the undercuts, especially those nearest to you, must be tested with appropriate instruments. This, I understand, Dr. Herbst does, and that at all stages of his work he is constantly operating and testing with instruments terminating in a point. This being the case, the Herbst system will no doubt supplement at least, the operations of all of us who become familiar with it. For the sacrifice Dr. Herbst has made in coming three thousand miles to do us good, for his honest and generous endeavors to benefit and exalt our profession, he deserves our gratitude and respect, whether we adopt all of his views or not, and I trust that when he returns home he will have the happy conviction that in no part of the world has he warmer and more and appreciative friends than in America.

On Friday, July 2d, Dr. Herbst gave two clinics, when he filled with gold, for Miss ———, the upper lateral on the mesial surface in nine minutes, and the left upper central in the distal surface in six minutes. He then filled for Dr. Wm. H. Atkinson the left upper canine, the cavity involving the entire mesial surface and a part of the cutting edge. The cavity was very large, and was filled more than twenty years ago with oxy-chloride of zinc by Dr. Butler, and the pulp was then capped. This was found to be alive, but evidently had retracted, as secondary dentine was discovered in the upper part of the pulp chamber. Before the cavity was excavated Dr. Herbst bent a German silver loop matrix around the tooth, similar to the one employed the day previous for the bicuspid, and after the tooth had been prepared, the rubber dam applied, and the matrix readjusted, filling was commenced. The cervical portion of the cavity was filled with a thin layer of tin, and this was followed by Wolrab's gold cylinders. In the last layers of gold, No. 10 foil was made use of. Each layer was critically examined by Dr. H. J. McKellops, of St. Louis; Dr. W. G. A. Bonwill, of Philadelphia; Dr. J. Taft, of Cincinnati; Dr. R. R. Andrews, of Boston; Dr. F. H. Rehwinkel, of Chillicothe; Dr. D. W. Tennison, of New York; and Dr. C. F. W. Bödecker, of New York, and found per-

fect in every respect. When the operation was completed, the patient expressed his thanks to Dr. Herbst, and his gratification at the exemplification of the new method.

THE FIRST DISTRICT SOCIETY DINNER.

On the evening of July 2d, the members of the First District Dental Society of New York, with invited guests, met at Mazzetti's, where a sumptuous repast awaited them. The occasion was a brilliant one, remarkable for the eloquent speeches, and the witty remarks made by some of the prominent men in the profession, all expressive of their good feeling toward Dr. Herbst, and of their pleasure in having him in their midst. The President, Dr. William Carr, made the opening address, and spoke as follows:

We are congregated here to-night to meet one of Germany's ablest dentists, Dr. Herbst. For years he has pursued a course of investigation and made a series of experiments, principally in the operative department, in order to ascertain the best method of filling teeth. The one which he utilized and adopted is known as the Herbst method, and it is more or less familiar to every dentist of this society. He has come here for the sole purpose of demonstrating his theory of filling teeth, and we assure him that in all societies he will have every opportunity, and will find an appreciative audience. We welcome him as a brother, and we trust that his sojourn amongst us will be a pleasant one.

Dr. E. Parmly Brown said that, as the gentlemen were all so exceedingly modest as to hesitate about speaking, he would take the initiative, and announce that Dr. Atkinson had one of his eye-teeth filled by Dr. Herbst, and it was declared by him to be a marked improvement, and worthy of the notice of all the profession. Dr. Herbst responded in his mother tongue, being kindly interpreted by Dr. Bödecker. He said:

My honored colleagues and gentlemen of the First District Dental Society of New York, when the steamer in which I arrived in this country entered the port of New York I literally trembled, little dreaming or having any anticipation of the generous reception in store for me; I came to this country to show a few little things I have discovered, and you will allow me to take this occasion to thank you for the great pleasure you have given me. It is a well-known fact that the profession of this country is far ahead

of any known in the world, and I have been stimulated to see whether I could not do the same work, using different methods. I do not know how to express my thanks to you, for I do not believe that I have earned all that you are doing for me. I feel grateful for anything and everything that has been done in my behalf.

Before me, in my mind's eye, I see such men as Drs. Webb, Varney and Barnum. Dr. Barnum was one of your own members. I bring from every dental society of Germany a wreath in memory of the late Dr. Barnum. Every society of the German Empire is represented here to-night. In the first instance, there is the Central Verein of Germany, of Schleswig Holstein, Saxony and others, There is a ribbon from the Society of Frankfort, the society which first indorsed my invention.

A laurel wreath, from which were suspended various hued ribbons representing the different societies was brought to view, and Dr. Atkinson was requested to accept this token in behalf of the First District Dental Society, and he replied accordingly:

I accept with gratitude and thanks for our society this noble recognition of our departed brother, S. C. Barnum, who, in the generosity of his nature, bestowed this great boon. This is an occasion on which we have a right to congratulate and felicitate ourselves on the recognition of one of our own members, and of the benefit which he bestowed upon his profession and humanity by his inventions. It speaks the honesty of the German mind, and the German nationalities. This should encourage us all to work earnestly and honestly that we may arrive to honor in our calling. What have we here to-night before us? The Empire State as represented in our profession, and represented by its First District Dental Association. I indorse the idea of acknowledging merit always. We should accept it with gratitude and thanks. I would like to tax your patience a little further in acknowledging the uprightness and straightforwardness of the gentleman whom we meet here to-night. I would like to express the admiration I feel for the manliness of Dr. Brown in acknowledging the good which he has seen, even though it be in the face of his previously expressed prejudice. I would like to speak of the operation in my own mouth, of the directness with which it was performed, and to assure you that this rotation method is in accord with the principles of the laws of nature.

Now, I want to give a little word of exhortation. I am proud

to-night of the dental profession of the United States, and especially of you, my brothers, who sometimes get dissatisfied with the maternity and fraternity which I have preached to you. Here is a man who has been inspired from the same high source, and who has discovered and made known to us the only true way to fill teeth. Let me close by offering the following resolution:

Resolved—That this society, on behalf of and in humble commemoration of the late Dr. S. C. Barnum, our beloved and honored member, accept these mementoes from the different German dental societies with many thanks.

Dr. Taft, of Cincinnati, said—I am not so well prepared to speak as those who have just been heard. I am greatly gratified to meet our brother from abroad. We have heard many accounts of him, and I desire to express my gratification and pleasure at seeing an exemplification of his method of operating. I desire to extend my hand to this brother, because it is the first exemplification, the first practical fact that has been exhibited to us by our brethren from other countries. We have not mingled with them as frequently as we ought to have done, and I accept this as an indication of better days in this respect. A profession of Germany, of England, and of France! It will be the profession of the world, when it will be exemplified in character; when that which they have shown to us shall be accepted and improved by us. I feel happy to meet this brother from the other side who comes to teach us something, for I honor anyone who can teach Americans anything. I rejoice to say to him that he can return home with a laurel about his brow that no one else has worn. He has brought to us this system, saying, “This is yours; and you can have it.” Would that we had all acted in this respect for the profession. A few have manifested this liberal spirit amongst us, but it is sad to think how few. I hope and look forward to the time when there shall be more mingling together of the professions. The great object in our life is to give to others. What an encouragement when that shall have been carried out to the ultimate; what a grand and glorious profession we will have. I trust that Dr. Herbst will feel on his return home that he has not come in vain, but that he has done great good. We ought certainly to tender him some mete of praise, and I hope that we shall not only know Dr. Herbst, but many of his confreres.

Dr. Rehwinkel—I scarcely know how to express my thanks to-

night. My old and beloved friend, Dr. Taft, has said something which I think I can augment a little. In a private conversation with Dr. Herbst, he told me that all Germany was indebted to American genius in every branch of inventive enterprise. That in trying this mode of filling teeth he came to the conclusion that this was the proper method, and felt his way cautiously along, going from one operation to another, until he could proceed with any ordinary operation. But when a brother came to him from America and told him that this method would never be recognized in America unless it could produce contour fillings, he commenced a series of experiments and to find if it were possible to build up teeth by adding one particle to another, and his expectations were realized. He presented it to the profession of Germany. Some believed it a success, some otherwise. Some praised and others condemned. He went from place to place to demonstrate it, and laid it openly before his brothers in the profession, until gradually, step by step, it gained indorsement in Germany. But this did not satisfy him. He wanted the sanction and support of the entire profession. He felt that to crown the system he must turn to the American profession. Thus Dr. Herbst spoke to me, and to-day I have had the pleasure of seeing him operate. This method requires practice, but there is no mode that does not require the same. Dr. Herbst's utter abandonment of self, his generosity in laying his work before us, deserves recognition, and the dental profession cannot but honor these qualities.

Dr. McKellops—I did not come here to make a speech; I came here to learn. I have seen my friend from Ohio operate according to this system, and I have seen others. But that did not satisfy me. I wanted to see the original, and I have seen him to-night. I am proud of this Society. It has exhibited generosity in extending this recognition, and that is a matter in which we may all feel a pride. I have come from St. Louis to see this thing demonstrated. I have watched it closely, but I must first experiment myself before I pronounce it a success. But I tell you gentlemen, Herbst is a genius; he can make or execute more out of nothing than any man I have ever seen. I go home satisfied, and when I talk to those fellows on the other side of the Republic, they will believe what McKellops says.

Dr. Bogue—It is a pleasure to all of us that Dr. Herbst is with us

to-day. One by one the influences that control and influence the profession on either side of the great sea become known to us all, and year by year we are becoming one in mind and in spirit. Extending to Dr. Herbst my best wishes, I earnestly hope for an opportunity to witness one of his operations.

Dr. Abbott—I, like some of my friends, came here not to talk, but to eat and drink: simply to enjoy the festivities. I have not the least idea of saying a word, save to wish Dr. Herbst, our friend and brother, the genius, all the success that he deserves.

Dr. Heitzmann—I am greatly pleased at the honor you confer to-night upon a countryman of mine. I experienced the same just twelve years ago. Dr. Bödecker tried the Herbst method on my teeth, and I found it a decided improvement. The great honor that you to-day accord a foreigner reflects honor on yourselves. He came to see you, not to seek a fortune.

Dr. A. H. Brockway—I can hardly express my astonishment and surprise at being called upon to speak. I regard these gatherings of dentists (the best ones in the profession) from various parts of the country, with pleasure. I look upon the social element of dentistry as something which ought to be cultivated in the very highest degree. It is a grand idea, that of a man who has devised something which he considers beneficial to his fellow men, that he should come from abroad to exhibit it to them. What could have impelled him to do this: Selfishness? No. It is something higher and deeper than that, which influences him. He has the good of his profession at heart, and it is that which brings him to our shore.

Dr. C. A. Timme, in a few words expressed his gratitude, thanking the Society for the honor done his countryman, Dr. Herbst.

Dr. Schreiter also expressed his satisfaction and pleasure at the manner in which his colleague was received. He felt particularly grateful to the fraternity for having accepted the token of gratification for the lamented Dr. Barnum in a manner indicating their thorough appreciation of the act, and furthermore declared that he felt warranted in saying that the German profession is keenly alive to the generosity of the American profession, and of the benefits the German is constantly receiving from the American. It had become almost a matter of natural consequence that nothing

would be considered good unless it came from this country, and the German profession feels now that, for the first time, it is able to present something in return. He expressed the desire that the feeling of friendliness would continue.

Dr. James McManus—I have heard considerable about Dr. Herbst's method, and I have read a great deal about him. I had a chance to look at that celebrated tooth in the mouth of Dr. Atkinson, and before I go home I hope I shall have the pleasure of seeing the Doctor operate. All I can say is, that I am very glad indeed to be with you to-night.

Dr. Bödecker—About three years ago Dr. Herbst sent me one of his patients with a letter, requesting me to examine the fillings which had been put in by him, and to say if they were in any way equal to the work done by some of the members of the profession in this country. I examined the fillings very carefully, but did not say anything about them, nor write any letter to Dr. Herbst. I thought it a better plan to go to the Dental Society, and forthwith announced to it that I had seen some work done by a new method, and thought that in it there might be a future. I was not mistaken, because very soon after, gentlemen from Stockholm and Paris noticed and remarked it. I made a trip to Germany to investigate. The German Societies had prohibited Dr. Herbst from speaking of his method, and refused to allow him to give a clinic. Why did they act thus? The German Dental profession, collectively speaking, has no method of practice whatever. As a rule, they cannot produce a filling which would satisfy a student of the first year's term. Two years ago, while I was in Germany, the Verein there permitted Herbst to give a clinic. Some there were who talked a great deal of nonsense about it. I told them at that time that I sincerely believed there was something in the matter which I could indorse, and future trials by myself, as well as by others, have verified this. I was in the house of Dr. Herbst a little more than a week, all the while watching his operations very closely, and with the knowledge I had of the matter, I proposed to the First District Dental Society to extend Dr. Herbst an invitation, which I thought, if officially given from the Society would be most cheerfully accepted, although its acceptance would prove a sacrifice to himself and family. I wrote to him, and received a most courteous reply. He left his home, patients, all to enable

us to perceive whatever he had to show. Last year, and two years ago, I saw a great deal of his invention, but I must say that the improvements made between this year and last are wonderful.

I did not believe that he would be able to accomplish the things he has demonstrated in my presence. That is the reason why, up to this time, I have practiced the Herbst method cautiously, not wanting to mislead anybody, either my patients or myself. I have usually finished my operations by the old method, but from the success I have seen and achieved for the last two years, I feel satisfied that good and solid fillings can be made by the Herbst method. It requires a deal more of practice to produce perfection than I have had any idea of. I feel more indebted to Dr. Herbst, on account of having witnessed and practiced more of his method, than anybody in this country, and because I have derived more benefit therefrom.

Dr. Herbst was again prevailed upon to respond. He expressed his regrets that he had understood but little of what had been said, but when it was explained to him he said that had he comprehended all that was mentioned during the time he would have left the room, as more had been expressed than he deserved. He said that he had always honored the First District Dental Society, and had always desired to bring his method before it. He had found that many Germans who had been with him and become really interested in the method, had made as poor or worse gold fillings than they had made with amalgam in the old mode. So far, among those who had given him honest assistance, the foremost was Dr. Bödecker. To him, above all others, did he owe a debt of gratitude. Had it not been for him, the Herbst method would not have become known. He felt truly and deeply grateful to him for having been a sincere advocate. His great ambition had been to bring this method before the First District Dental Society in America, and now he felt satisfied. When he received news from America that this method had really obtained some recognition here, he was content. Nay, more than that; it would be impossible to express his gratification, for it was the first instance in his career in which any body of dentists had acknowledged that there was some method in his madness. He anticipated great pleasure in again seeing those present when he attended the International Medical Congress, and hoped to meet them all next year.

Editorial.

THE VISIT OF WILHELM HERBST.

American dentists are a matter-of-fact body of men, and whatever appeals to the practical side of their natures meets with a warm reception. As a class they are not as well versed in theory as are their brethren of England or Germany. They have made comparatively little advancement in general science, and in dental technics they cannot compete with many of other nationalities. All men are the creatures of circumstances, and their development is dominated by their surroundings. America is a comparatively new country, and Americans so far have been obliged to wage a ceaseless warfare with the forces of nature. The face of our land must first be remoulded, and the country subdued and improved. All this has developed the practical side of American character, and made us the most ingenious and inventive people in the world. We have been, during the whole period of our national history, engaged in solving practical problems, and the consequence is a patent office full of the models of ingenious mechanisms, the records of inventive triumphs which have astonished the world.

American dentistry is a synonym for clever devices, for unrivalled manipulative triumphs, for surgical and operative skill that is unequalled. But we are not a scientific profession, nor do we excel in the patient assiduity which constructs a beautiful piece of mechanism after a definite mechanical rule. We are apt to scoff at the general attainments of foreign dentists who have an acknowledged standing in the scientific world, and to deride as only an artisan the trained mechanic who spends his life in perfecting details. There is a happy medium that we shall sometime reach, but in the meantime our colleges, which are chiefly engaged in teaching practical dentistry, suffer in the eyes of foreign dentists, who refuse to acknowledge them because they are more practical than literary and scientific.

It is this peculiar natural tendency, or characteristic of American dentistry, that has caused American dentists to warmly welcome Wilhelm Herbst to their midst. Here was a man who appealed very strongly to several phases of American character. He had devised or discovered a new way to reach a practical end sought

by every American dentist. He was a mechanical genius, an inventor, and as such had attained to the summit of the highest ambition of every American. He appealed as strongly to American sympathies as he would have done to Germans had he devised a new philosophy, to Englishmen by opening up another industry or discovering an original law of trade, or to Frenchmen by inventing a new soup.

There was a kind of suspicion too, that he had not received exactly fair play at home. Either his methods or his personality were such as not to commend him to the steady-going Germans, and the idea has taken possession of the American mind that he had been whistled down the wind, without a careful examination of that which he had to present. The Germans are great sticklers for professional etiquette, and for the ethics of dentistry. We are careless of these things (altogether too careless), and are ready to accept what we believe to be a good thing, no matter from what irregular source it may come. It was believed here that Americans were better judges of his practical methods than were Germans, because we are a more practical people.

The chivalrous feelings of Americans were aroused, not only by these considerations, but by the fact that Herbst had sufficient confidence in his ideas to place their exemplification before American dentists, and to risk their verdict. His enthusiasm appealed to enthusiastic natures, for Americans love an earnest man, even though he may be wrong. The fact that he was willing to make the great sacrifice demanded by a trip to this country for the purpose of teaching Americans something in their own line, also strongly appealed to their gratitude. It was the first time that a foreigner had ever visited our shores with such a benevolent object in view, and American dentists desired to testify to the world that they were always anxious to learn, and grateful to those who could and would teach them anything. Many of our dentists had visited the old world with what they believed to be valuable ideas and methods, but because our ways were not their ways, and because the information was not offered through the conventional channels, they had received but a cold welcome. It is undoubtedly the case that many competent operators who have gone to Europe from here have violated some of the proprieties of their professional life, but it should be remembered that we as a people are not so conventional

as are they, and our ways are those which are supposed to be the most direct. It astonishes Englishmen and dentists of other nationalities when they visit our society meetings and witness our free-and-easy, unceremonious methods. A little infusion of our directness and earnestness would, we think, be beneficial to foreign societies and meetings, and it is certain that an importation of some of their decorum and high regard for professional ethics would greatly redound to our good.

Well, we did not set out to write a disquisition on American or foreign professional character, but to consider why Herbst was so warmly received in this country. In this number will be found a full account of what transpired at the festivities in New York. It is certain that the rotary method of filling teeth will here receive a thorough and careful test. Indeed, it was not entirely new to Americans, for Dr. Bödecker, a dentist in whose ability and honesty every American dentist has the utmost confidence, had already introduced the method here, and this journal had devoted much space to its consideration. The method had not, however, made any considerable progress, but it was felt that it was only fair that a verdict should not be pronounced until its exemplification at the hands of its discoverer had been witnessed.

Herbst has now been here, and has made a very favorable impression by his geniality, his earnestness, and his evident great mechanical ability. His methods and ideas remain with us, and must make their way by their own merits, if they advance at all. But even though not an American dentist may adopt the method, the visit of Herbst will not have been in vain, for there has been a broadening of ideas, a professional development through this opportunity for comparing American manipulative skill with that of a capable exponent of another country. Whatever may be thought of the merits of the system of burnishing gold into cavities in teeth, there seems to be but one opinion concerning the innate operative ability of its inventor.

It should be noticed that the report of the Herbst festivities in New York does not trench upon the regular matter of this number. The manuscript was not received until the number had been made up, and it could only be admitted by enlarging the size of the journal. This has accordingly been done, and the report is, therefore, entirely extra matter, beyond the usual fifty-six pages.

THE A. D. A. MEETING.

This number is issued a few days in advance of the usual time, that its announcements may be in the hands of subscribers before the time for the meeting at Niagara. It is expected that a large number will be in attendance at that meeting. Every arrangement possible has been made by the committee, and an unusually large number of papers of merit are already promised. The indications now are that even more matter will be presented to some of the sections at least, than there will be time and opportunity to report to the general meeting. Niagara is now free to the people of America, and under the new regime it is the most delightful place of resort that we have. The hall for the meeting is the new theatre at Niagara, and it offers unusual advantages. The headquarters for the Association will be at the International Hotel, which promises reduced rates to the members. The Cataract House, which has heretofore been the home of many delegates during our meetings, seems to entertain the idea that because its attractions are lessened its prices should be advanced. The improvements made, and the opening of the National Park, have robbed that old house of its river parlors and of its best rooms, but it refuses to make any concessions for delegates and members.

Those who desire accommodations quite as good, but at a less price than those of the International, can obtain them at the Prospect Park Hotel. Members will be received here at \$2.00 per day, by engaging their rooms in advance, and they will be certain of good entertainment.

ARE MICRO-ORGANISMS SCAVENGERS, OR THE PRODUCERS OF
PATHOLOGICAL CONDITIONS?

In the new dictionary of Practical Surgery, by Christopher Heath, under the head of "Abscess," we find the following:

"It must be remarked that micro-organisms are always present in these cases (septic abscesses), and that we are totally unable to say how far and in what way they may be irritating in themselves, independently of the acid fluids which accompany their growth."

It would seem as though this were a late day to begin to raise questions concerning the nature and origin of the acids which accompany the proliferation of micro-organisms. Miller and Black have demonstrated that they are the *products* of the organisms

themselves, and the former has analyzed some of them and determined their character. Further, he has produced certain oral and gastric disturbances by inoculation with cultures of the organisms. It has been urged in the past that it was impossible to say whether or not the organisms attending certain pathological conditions were cleansing in their nature, and their office the removal of the septic products of disease. It was loudly asserted that their habitat was disordered tissue, and that they could only proliferate in pathological conditions.

There was much of probability in the theory, but it has been absolutely demonstrated as false in certain conditions, and so far as we know, Miller was the first to do this. He proved that veritable decay and destruction of hard tissues could be brought about by infection with pure cultures of the organisms, and at the same time he demonstrated the exact nature and origin of the fluids in which they existed, and the acids which accompanied them. The organisms themselves having been shown to produce the acids, there was no longer any question about their pathogenic character.

It has always been our boast that general medicine was indebted to dentistry, not only for anæsthesia, but for the demonstration of other medical principles, and the first absolute chemical and physiological demonstration of the true character of the disease germs of the human system is another mark to our credit, and a matter in which every dentist should feel a just pride.

“WHY DO INDIANS HAVE SUCH GOOD TEETH?”

The secret of the extraordinary longevity of the Indians is their simple diet and regular habits. They themselves say that when an Indian goes into service and eats the food of the white man, the Indian's teeth begin to decay. Their perpetual grinding on tortillas keeps the teeth white, and the lime in the tortilla makes tooth bone.—*Exchange*.

Such paragraphs as the above are the consequence of pseudo-scientific writing by men who know nothing of the facts of the case. What particular Indians are referred to is not stated, but it is to be presumed that the North American Indians are meant. In that supposition, the heading of this article would remind one of the question of Columbus. Why, when a turbot is placed in a full vessel of water, is there no overflow? Long speculation concern-

ing the reason was indulged in, till it occurred to some one to test the matter, when it was found that the water did overflow.

In the first place, Indians do not have good teeth.

Secondly, they are not at all noted for longevity. On the contrary, all the races of Indians are swiftly dying out, and fast becoming extinct.

Thirdly, Indians are not of regular habits, their only regularity consisting in being regularly irregular.

Fourthly, an Indian never goes into "service," as the English understand the term. He is incapable of submitting to "the regular habits and simple diet" of the white man. He wants little of the whites, except whisky.

Tortillas are corn cakes used in Mexico, and it is rather tough to imagine them as serving for tooth powders.

About the "lime in the tortillas making tooth-bone"—well, that is too funny for anything. Why will professionally scientific journals give currency to such absurdities under the name of scientific teaching? To start out with notoriously false premises, and, based upon them, to weave such a web of sophistry and false deduction, is scarcely worthy a professional journal. It is no excuse to plead ignorance, for such assertions should not be indulged in without the certainty of truth to base them upon.

THE HERBST CLINICS AT NIAGARA.

Dr. Wilhelm Herbst will be at Niagara and will give clinics during Monday, the day preceding the meeting of the American Dental Association, and Tuesday, the first day of the meeting. It will be impossible for him to remain longer, as he sails for home during the week. It is unnecessary for us to urge that operative dentists be present at that time, for they will all recognize its importance. Here is a peculiar system of operating proposed, and it is the duty of everyone to become acquainted with its merits or demerits, no matter what their predilections may be. The candid man examines before he condemns or approves, and an opportunity that should be accepted is now offered to compare American with German manipulative skill, and finally to determine, each for himself, whether it is worth while to experiment with the rotary system of filling teeth.

SCIENTIFIC SOCIETIES.

X In England and on the Continent, to belong to a recognized scientific society is a mark of distinction. The members of the Royal, the Geographical, the Microscopical, the Linnæan, and other similar organizations, append the initials to their name, and the F. R. S., F. R. M. S., F. L. S., etc., are as well known as our own M. D., or LL. D. They are a distinction because they have never been cheapened by indiscriminate bestowal. A man must have a recognized scientific standing to secure membership, and the dilettanti and the pseudo-scientists are rigidly excluded.

We might have such societies in America if they were properly conducted. In dentistry a number of organizations have been effected with a grandiloquent title attached to membership. But the trouble was that they usually were instituted by men who had no particular professional standing, or they were soon invaded by dentists with shady reputations, and their good name was tainted at the outset. The time will come when Americans will have leisure to turn their attention to other than practical every-day matters, and when the better class of professional men will band themselves into societies which shall command the respect of all the world. In the meantime, we may well rest content with our present reputation for practical horse-sense and inventive ingenuity.

TO CONTRIBUTORS.

We are again obliged to ask for consideration at the hands of contributors. So much of excellent matter has been offered that it is impossible to print it all without delay. Each month all that the number will contain is printed, but still many instructive articles are necessarily held over. Sometimes the best of contributions are withheld a month, because other articles on the same subject are in type. We can assure our correspondents that their favors are valued very highly, and it is a matter of pride with us that, so great a favorite is the journal, at all times we have an abundance of good material.

TO SUBSCRIBERS.

Bills for such as are indebted to this journal will be enclosed in this and the succeeding numbers. We bespeak for them prompt attention.

Current News and Opinion.

A CASE IN PRACTICE.

The following case in practice brought to my notice by A. Rosenthal, Liege, appears to me to be of sufficient interest to merit a place in the *INDEPENDENT PRACTITIONER*: Madame X, age thirty, suffered from a sarcoma of the lower jaw, which necessitated the resection of the ramus and a considerable portion of the body of the jaw of the right side. The second and third molars were lost by the resection. As is usual in such cases, the remaining portion of the lower jaw was so drawn to one side (in this case of course the left), as to completely destroy the articulation of the teeth, and to render every attempt at mastication fruitless. The articulation was perfectly restored by an apparatus designed by Mlle. Rosenthal, and inserted by her father.

The apparatus consisted of a small gold piece attached to the second molar and second bicuspid above (the first molar is wanting), and a similar piece attached to the bicuspids below. The lower piece carries a curved tube about two centimetres long, the upper an arm which passes into this tube. The arm is sufficiently long to prevent its being drawn quite out of the tube when the mouth is opened wide, and sufficiently strong to withstand the action of the muscles of the opposite side. This very simple apparatus completely restored the articulation and power of mastication. It has now been in use for three months.

W. D. M.

Berlin, June 6th

INFLAMMATION IN EGGS.

There is a condition of the egg, very little known, which considerably impairs its sanitary value as an article of food. Soon after it became the practice to transport eggs in large quantities and to long distance by railway trains, it was found on their arrival that adhesion had taken place between the membranes of the yolk and those of the shell, so that the yolk could not be turned out of the shell unbroken. On examination by experienced pathologists this was found to be the result of true inflammation: the material of the adhesion was found to be precisely the same as that of the plastic exudation in inflammation of the lungs or bowels. It will at first seem absurd to speak of inflammation in such an unformed mass as an egg; but this arises from our forgetting that, structureless and unorganized as it seems, the egg, even when fresh laid, is a living being capable of disease from external causes. The cause of this inflammation is undoubtedly the shaking and friction from the motion of the cars, and it cannot but render the egg more or less unhealthy, as the products of inflammation can never be as salutary in food as those of healthy growth.—*Bulletin of the Tennessee Board of Health.*

CORRIGENDUM.

In the article entitled "Teeth with Exposed Pulps," page 355, line 12, in the July No. of the *PRACTITIONER*, please read "or a foramen enlarged from *dis-ease*;" for, "a foramen enlarged from *disuse*."

B. MERRILL HOPKINSON, D. D. S., M. D., Baltimore, Md.

AMERICAN DENTISTS IN GERMANY.

The excellence of American dentistry is nothing new to Europeans, but it is not often that such tangible testimony is borne to it as is involved in the establishment of a German journal as the express exponent of the thought and interests of the German dentists educated in America. Such is the function of the "Journal für Zahnheilkunde, Vereins-Organ der Deutschen Vereinigung in Amerkia graduierter Doctoren der Zahnheilkunde," the first number of which has just reached us. The new journal, which is to be a quarterly at first, with the prospect of more frequent publication in the future, is edited by Dr. Erich Richter, and published in Breslau. The initial issue is handsome in appearance, and is filled with excellent matter. We have no doubt of its prosperity, and we wish it the fullest measure of success, quite as much for its own merit as out of gratification at the implied honor to our country.—*New York Medical Journal*.

MISSOURI STATE DENTAL ASSOCIATION.

The following members were elected to serve as officers for the ensuing year:
President—Wm N Conrad, St. Louis.

First Vice-President—R. R. Vaughn, Marshall.

Second Vice-President—T. M. Nicholson, Fayette.

Recording Secretary—John G. Harper, St. Louis.

Corresponding Secretary—Geo. L. Shepard, Sedalia.

Treasurer—Jas. A. Price, Weston

JOHN G. HARPER, Recording Secretary,
 516 Walnut St, St. Louis, Mo.

NATIONAL ASSOCIATION OF DENTAL FACULTIES.

By request of the Executive Committee, the time for holding the Annual Meeting of the National Association of Dental Faculties has been changed from August 4th, to Monday, August 2d, 2 P. M., at Niagara Falls.

H. A. SMITH, Secretary,
 Cincinnati, O.

THE WEEKLY MEDICAL REVIEW, we take it, is not much in favor of home rule. Quoting a paragraph from last month's INDEPENDENT PRACTITIONER, concerning the expense of municipal government in the different great cities of the world, in which it was shown that it cost \$36.95 *per capita* in New York, as against \$7.40 in London, \$7.35 in Berlin, and \$5.40 in Paris, it intimates that London is governed by Englishmen, Berlin by Germans, and Paris by Frenchmen, while New York is ruled by the Irish. That is rather a reflection on "Home Rule."

MAJOR R. E. STEWART, L. D. S., of Liverpool, England, died in that city, May 19th. He was a liberal supporter of dental movements, and held the Chair of Mechanical Dentistry in the Liverpool School of Medicine. A number of the delegates to the Congress of 1881 will remember with pleasure the convivial Major.

THE DEATHS FROM ANÆSTHESIA, during the past year in England, have been reported in *The British Medical Journal*. Twelve deaths occurred from chloroform, eight of the operations during which the agent was used having been severe. From ether but three died, which is remarkable considering that it is used very largely in England. No death has been recorded from the bichloride of methylene, nor any from mixtures of chloroform and ether. This, too, is noteworthy, the A. C. E. mixture—alcohol, chloroform and ether—being a favorite one with English surgeons. As there is nothing in either that is antidotal to the other, it might be anticipated that the mixture would combine the dangers of each. This, however, does not seem to be the case, the immunity being probably due to the dilution of the drugs by the alcohol.

DR W. H. WAITE, of Liverpool, England, says *The Journal of the British Dental Association*, is compelled to retire from practice because of a threatened loss of vision. This is a matter of regret to every dentist who loves his profession, but to those who know the man the knowledge will come as a personal affliction. Dr. Waite has visited this country more than once, the last time being only two years ago, and there were few foreign dentists who had so many personal friends and admirers in America. His mental qualifications, his moral worth and his genial manner, have gained him the respect and regard of all whom he has met in America, and they will unite in the wish that the present dark anticipations concerning his vision may not be realized.

IN THIS number will be found a continuation of Dr. Harlan's "Observations on Foreign Dental Schools," the first part of which was published in the May number of this journal. *The Journal of the British Dental Association* speaks of the first article as follows: "Dr. Harlan has published a very chatty and agreeably written account of his recent experience in Europe, in the INDEPENDENT PRACTITIONER. The article is to be followed up by another on the same subject. It is well worth reading, and has the merit of being just and impartial in its criticisms. The interest of a review of our own doings by a friendly visitor warrants us in extracting the article *in extenso*."

SIR HENRY THOMPSON believes that artificial teeth are an evil to those advanced in years, as they enable such persons to masticate flesh. When the teeth fail naturally, he says, it is nature's design that the individual should subsist on vegetable diet.

What a crank. Everyone knows that flesh is more easily digested than vegetables. Besides, the latter need mastication and insalivation more than the former, if possible. It is certain that Sir Henry Thompson is not an old and toothless man, and that when he becomes so he will let no time be wasted in procuring a set of false teeth.

ON February 16th was sold by auction, at Kensington, the historical house once occupied by John Hunter. Among the articles advertised for sale was "the old historical copper coving and fittings," used for the purpose of boiling the remains of the Irish giant, O'Brian.

THE PRESIDENT has vetoed the bill legalizing dissection in the District of Columbia, on the ground that it failed to provide sufficient safeguards against the delivery of bodies to unauthorized persons.

The President uses the veto hatchet like—a lawyer. Medical men are liable to suits from lawyers if they are not thoroughly familiar with human anatomy, and yet they would remove the only possible source of practical anatomical knowledge.

THOSE WHO DESIRE to find a hotel in New York which will give them all the comforts of a home, will do well to visit "The Westminster," at Sixteenth Street and Irving Place, only a block from Union Square. Its table is unrivalled. A party of six gentlemen lately dined there with a guest of the house, the dinner being served from the regular bill of fare, and it was with difficulty that the host of the occasion could convince his friends that it was not a formal affair, specially ordered for the occasion.

ARCHIVES OF PEDIATRICS is an excellent journal from a medical point of view, and unexceptionable from a literary standpoint, but morally it is worthy of rebuke. There is a wide difference between a plain and faithful medical description of any given case and unnecessary vulgarity—between the use of essential anatomical terms and the descent to disgusting obscenity. The author of the leading article in the June number violates common decency.

IF THERE is any meanness in a man or woman, it is certain to show itself in traveling. At home the usage of good breeding demands common politeness, but on a journey selfishness exhibits itself, for then it is everyone for himself. I would never marry a woman till I had traveled with her. I would prefer the wedding trip before marriage. It might be a voyage of valuable discoveries. —*Lancet and Clinic*.

IT WILL bring pain to many hearts to know that Bradford C., only son of Dr. F. E. Howard, of Buffalo, was drowned at Geneseo, July 9th. Young Howard was a very bright and promising boy of fourteen years. The sympathy of friends will not heal the wound of the bereaved parents, but it may soothe some of the pain to know that many sincerely condole with them.

IN A CASE of profound , a . may arrive when the ? may well be made regarding the necessity of emptying the : Unless the conditions be grave the physician should not be expected nor * his reputation by making an abdominal §—*Weekly Medical Review*.

Brain softening will at some time put a . to that ¶r.

THE MEDICAL AGE reports that his Satanic Majesty, while visiting earth for a cargo of sulphur to be used in his dominions, was shown a sample of iodoform. He immediately countermanded the sulphur order and substituted iodoform.

ARTHUR S. UNDERWOOD, M. R. C. S., L. D. S., editor of the *Journal of the British Dental Association* has been appointed dental surgeon to the Dental Hospital of London.

THE Independent Practitioner.

VOL. VII.

SEPTEMBER, 1886.

No. 9.

Original Communications.

NOTE.—No paper published or to be published in another journal will be accepted for this department. All papers must be in the hands of the Editor before the first day of the month preceding that in which they are expected to appear. Extra copies will be furnished to each contributor of an accepted original article, and reprints, in pamphlet form, may be had at the cost of the paper, press-work and binding, if ordered when the manuscript is forwarded. The Editor and Publishers are not responsible for the opinions expressed by contributors. The journal is issued promptly, on the first day of each month.

LOCULOSIS ALVEOLARIS

(POCKET DISEASE OF THE ALVEOLUS.)

FOUR STAGES.

(Continued from page 343.)

BY J. N. FARRAR, M. D., D. D. S., NEW YORK CITY.

A LECTURE DELIVERED BEFORE THE BROOKLYN DENTAL SOCIETY, FEB. 8, 1886, ACCOMPANIED WITH BLACKBOARD DRAWINGS.

III.

General Remarks.—The treatment of the subject of Loculosis, from the initiatory stages to the final result of an unchecked career, covers a wide range.

So far as I have investigated, there appears to be some half a dozen or more causes which may contribute to the establishment of the disease. It is not my present purpose, however, to enter minutely into details, but at some future time I may express my views more fully through some of the periodicals.

Although I shall not deal with the tempting phases of the deeper causes, I would not have it thought that my remarks are empirical or one-sided, for they are based upon careful practical investigation.

To begin I will forestall the conclusion somewhat, by stating that the rise and progress of this disease, which *once established is never cured by unaided nature except by ejection of the tooth*, may be divided into four stages: 1st, gingivitis; 2d, separation of the lining membrane of the socket from the root, constituting the pocket; 3d, caries; 4th, necrosis of the alveolus.

I will outline the progress of an extreme case, noting its career from incipency to the worst stage, as it appears to the unaided eye and sense of touch. In doing this I shall disregard some of the speculative notions in vogue, which are based on assertions that have no foundation in fact.

While I am convinced that this disease is the combined result of systemic tendencies and local excitants, I shall confine my remarks to the latter; not following, however, the notion which has more than once been advanced, that "it arises from the same cause that leads to exostosis," an idea based on the ground that because excitement of the tissues causes the latter, and is common to both in their earlier stages, it consequently must be the cause of the former, for that would be about as logical as to assume that because "fester-ing" around a sliver accidentally driven into the foot and bunions are both preceded by local excitement of the tissues, the primary cause of both must be of the same kind.

Without going into histological details, let it suffice to say that the direct cause of exostosis is generally irritation of the coverings of the root, through some violent action of the tooth, as from the habit of biting threads, while on the other hand, the causes of loc- ulosis, local, as well as systemic, lie outside of the tooth, starting from the peculiar condition of the system which, in a nut-shell, may be said to impregnate the circulatory and oral juices with earthy matter to such a degree that the immediate environments of the tooth, such as decomposed food and altered secretions resulting from perverted functional conditions of the tissues immediately in contact, cause a chemical precipitate upon the tooth of the calcar- eous matter that floats in these circulatory and oral juices, to which state of things the naturally susceptible constitution of the alveolar

ridge, which is one of the most easily effected parts of the body, is a powerful assistant. Let us trace the local.



(Fig. 7.)

Sectional view of a case of Loculosis, showing two pockets and the calcareous accretions upon the roots of the tooth.

As everyone is aware, there is no union of the gingival margins of the gum with the enamel; therefore, as the gum in its normal condition generally extends above the point of its attachment, slightly overlapping the enamel, forming a shallow trough around the neck of the tooth, although closed by contact while healthy it will be seen great harm is liable to ensue should irritating matter get into it.

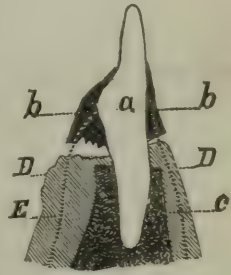
While the symptoms of gingivitis and the earlier symptoms of loculosis are the same, and gingivitis seems always to precede loculosis, still gingivitis is not always a forerunner of loculosis; in other words, a symptom does not always imply disease; a cough does not

always indicate phthisis pulmonalis.

Gingivitis, 1st stage.—The first characteristic of the true forerunner of loculosis is a peculiar redness of the margin of the gum, which once seen cannot be forgotten. The lip has not a surface rawness of the tissues, like that caused by collections of “salivary calculus” upon the crowns of the teeth (Fig. 8), but a disturbance within—the lip still retaining its epithelium, which condition is indicated by a deeper red, bordering upon the blue, and on becoming chronic gradually changes to a lighter and somewhat translucent shade.

Although retaining the epithelial covering about the neck of the tooth, this ring becomes more and more pronounced in outline as the disease advances, until it passes the line of mere inflammation and becomes incipient loculitis, with a pyogenic surface on the inside.

Careful examination within the annular trough detects a small quantity of decomposed food mixed with rancid serual juices, and generally, if not always, in addition a small quantity of



(Fig. 8.)

Alveolar destruction, not caused by Loculosis
a—Tooth.

b—Salivary calculi.

c—Alveolar process.

d—Tumefaction of gum.

e—Original form of the gum.

rough calcareous matter fixed upon the surface of the root, the nature of which is similar to that found upon the crowns of teeth, but generally more dense and of a darker color. At this earlier stage it is a mixture of two varieties of deposits, both from the blood; one directly, having oozed through the soft tissues constituting the walls of the trough, the other by a roundabout way through the salivary and oral glands. The first is called serumal deposit and the second salivary.

As the disease extends down the root, the per cent. of the serumal deposit increases. If the soft deposits are irritating, the rough calcareous accretions are more so; one acting not entirely unlike a rancid poultice, the other traumatically like coarse dried sand paint, which pricks and chafes the soft tissues of the trough every time the tooth moves, if loose, or when the tongue or food presses upon the outer surface of the gum. This aggravates and increases the congestion, causing the lip in effect to pouch out from the lingual and buccal surfaces, the disease extending down between, so that the tissues bleed from slight cause.

Probably the most pronounced cases of congestion are found among young women at a period when the whole system is liable to erratic manifestations; but, fortunately, because of their youth, and unless the congestion is too far advanced, they are easily cured by two or three treatments, and it is not liable to recur, or to end in loculosis.

This swelled condition of the annular lip increases the capacity for deposit, which accumulates as fast as room is made. In this way increased irritation and enlargement of the trough go hand in hand from bad to worse.

Besides additional deposits from without, the chafing of the soft tissues against the roughness within causes an increased osmotic flow of the juices through the walls into the trough, which, becoming rancid and populated with microbes, make matters worse by increasing the extent of the pyogenic surface, leading to formation of small quantities of pus.

Although now constituting the walls of a filthy nest of microbes, the diseased tissues at this stage are easily cured by thorough cleansing, followed by injection of some germicide lotion; or even if left in blood, if carefully watched, to keep away the exciting cause, with an eye also to the original tendencies, possibly the disease may

never recur; but once loculosis has gained a strong foothold, even if cured, it is liable to recur from slight cause, for it should be remembered that while the removal of the exciting cause may cure the local disease, it does not do away with the causes which underlie the local excitants.

2d stage.—If this irritating deposit is allowed to remain, the quantity will increase as the increasing irritation enlarges the receptacle, and *vice versa*. In this way the territory of the mischief widens until the congestion and stagnation cause the lining membrane along the line of its union with the root to become so weak that it finally falls away. Thus begins the formation of the true pocket, which, from the same cause, goes on increasing in depth and size until a pronounced type of the disease is established. Fig. 7 illustrates the appearance of two sizes of pockets often found at this stage.

If the disease continues unchecked, the hard tissues underneath become affected, and waste by retrogressive metamorphosis, urged on by deeper inflammation, so that the gum margins recede. In one sense this retrogression is a sort of physiological act on the part of nature, for the purpose of ridding itself of the irritations by undermining them, or in other words to reduce the socket below the deposits, even at the expense of the tooth. Nature here seems to work on the same line of argument as did the man who burned his barn to get rid of rats.

At this stage, or a little before, there is sometimes an absence of epithelium around the tooth exposing a raw surface of the gum, wasting of the gingival margin of the gum, or even the presence of this raw circular tract, although strong evidence of loculosis is not always a proof of it, for both may result from the presence of large quantities of rough calcareous accretions upon the crowns projecting over the gums, where all manner of inhabited filth may collect. (Fig. 8.)

Besides the degenerated vitality of the soft tissues at the bottom of the pocket, there is probably some influence contributing to increase the depth of the pocket, through the impaired vitality of the cementum along the line of its union with the socket membrane.

To reiterate, but without entering, as before said, the domain of

constitutional influences underlying this disease, the principal secondary cause of the separation of the socket membrane from the tooth, in a nutshell, seems to be congestion of the blood tracts caused by foreign substances wedging along, so to speak, between the socket membrane and the root of the tooth, as fast as the separation takes place.

Although generally confined to narrow limits and to one or two places on one side of the tooth, the disease occasionally attacks several points on one or more sides, often more or less circumscribing the root in one direction or the other, or both; sometimes cutting off the nutrient supplies to the dental pulp, and occasionally of the septums between the sockets to such an extent as to involve the adjacent socket membrane.

At this stage, or a little earlier, some patients experience disagreeable sensations about the teeth, even to pain; but pain, *per se*, although an evidence, is not always proof of any special stage. While most people begin to experience uneasiness at this stage, others are so sensitive that they feel something wrong much earlier. On the other hand, there are those who never seem to experience any inconvenience, even if their teeth are loaded with calculi and stand in inflamed pockets of pus.

While all this mischief is going on, some of the calcific elements of the alveolar process behind the soft tissues continue their retrogressive changes and are absorbed. This increases the diameter and reduces the depth of the socket. Sometimes entire septums between the sockets are in this way destroyed. If the alveolar process could be macerated and dried while in this condition, it would appear soft and porous like that portion of the alveolar process around a large abscess. This perverted condition may be carious, but not necessarily necrotic.

We have now arrived at a point beyond which the disease seldom advances, except perhaps in the degree of waste of the tissues, which generally goes on undermining the tooth until it falls out; after which the socket wall becomes covered with new granulations, perfecting into tissue, and the local disease rapidly disappears.

At this stage cure is somewhat more difficult than at the previous stage, and the disease, if cured, is more liable to recur, for the reason

that the surface of the root which is exposed in the pocket is often so low in vitality that union is too feeble to resist future collections upon the teeth, even though slight in quantity, but more because death of the surface portions of the cementum prevents any union whatever. While in a majority of cases the disease, *per se*, can be cured by careful cleansing of the parts and injecting some such germicide drug as diluted non-escharotic creosote, at the same time letting the medicine overflow into the mouth sufficiently to destroy all of the oral microbes, the exposed portions of some of the roots are so degenerated and softened, even upon living teeth, that cure is impossible unless it is scraped away. I speak emphatically upon this point, because experience has taught me its importance.

It may be thought by some people that unless the pocket is closed by reunion of the soft tissues with the root, the disease cannot be said to be cured; this would be as erroneous as to think that unless an eye that has sloughed out by some kind of local disease, which subsequently disappeared, is not restored to the socket, the disease cannot be said to be cured. The pocket is the result of the disease, but the pocket is not the disease itself. To be sure, the union of the soft and hard tissues is desirable, and is frequently attained in practice, but to assume that loculosis cannot be said to be cured so long as the soft tissue has not united with the root, would be as wrong as to assume that it cannot be cured if by extraction there should be no root left for it to unite with.

3d (Carious) stage.—In proportion as the disease becomes violent, it interferes with the nutrient supplies, not only to the tissue involved, but to the adjacent tissues, whether hard or soft, causing a fall in tone of vitality; sometimes this influence is so great that the hard tissues take on a character analogous to mortification of the soft tissues. In short, the alveolus is struggling with caries. At this time, and occasionally during the stage immediately preceding, particles of calcific matter become detached and work themselves through the gums, causing, in appearance, a sort of gum-boil (not alveolar abscess). But although lower in vitality than the second stage the case now, unless too far advanced in disease, is generally curable without excision of the hard tissues.

The treatment is plenty of nutritious food, thorough cleansing of the pockets, followed by some stimulating non-escharotic, antiseptic

germicide. If the hard tissues have degenerated beyond resolution, excision becomes necessary; but experienced judgment only can draw the dividing line.

4th (Necrotic) stage.—Increased quantity of pus from the pyogenic surface added to the carious condition of the hard tissues behind the pericemental wall of the pocket, accompanied by still greater congestion, impairs the vitality of the parts to such a degree that the stagnant condition of the nutrient apparatus is so great that some portions of the sick tissues die from starvation and poison.

At this period separation between the soft and hard tissues in some places begins, often followed by ulcerative destruction and waste of the superincumbent soft parts, until the tissues are so soft that they can be pierced by the probe without causing much pain.

Under such circumstances, the pockets filled with pus, rancid juices, decomposed food, microbes, and sharp, irritating, earthy deposits projecting from the root, congestion, stagnation, and disease all about, with little or no nutrient supplies, caries ends in necrosis, often followed by waste of the coverings until finally the dead bone is exposed.

As the condition preceding death of the bone is more apt to interfere with the nutrient supplies of the septums and edges of the sockets than elsewhere, necrosis is shown there first; from the edges of the socket death extends downward, but generally, more rapidly in the septums.

Pus from necrosed tissue is sometimes, not always, of an ichorous nature, which, mingled with the juices in the pockets, if allowed to accumulate aggravates to such an extent that the tumefaction takes on the appearance of abscess, a result which sometimes is sufficiently painful to prevent sleep. There is not only tumefaction of the soft tissues, but the bony portions of the sockets often waste away, so that after the deposits are removed there is left a space of one-eighth of an inch.

Fortunately, necrosis does not often occur in *loculosis alveolaris*; but when it does, the treatment in addition to that which is necessary in other stages is excision of the dead tissues, and the occasional use of sulphate of zinc, thirty grains to the ounce of water.

APPLICATION OF AND ELEMENTS OF SUCCESS IN CROWN WORK.

BY C. L. ANDERSON, D. D. S., WASHINGTON, D. C.

READ BEFORE THE CONNECTICUT VALLEY DENTAL ASSOCIATION, AT HARTFORD,
JUNE 11, 1886.

In the practice of such a comparatively new work as is the crown system, the exposition of which has not been general or thorough while the desire to practice it has been universal, it is not surprising that the proportion of failures has been so large, for the few who have made of it a specialty have been developers of a work, rather than practitioners of an exact demonstration.

That crown work of varying styles has been occasionally made by operators here and there is not denied, and that it is absolutely new in the strict interpretation of the term is not claimed. But the introduction of the Richmond Crown and its modification marked the point where the profession took another long stride in enlarging its usefulness, and a nearer approach to preserving the dental arch in normal beauty and form. The immediate recognition the work received illustrates how ready the profession is to adopt and execute. The introduction of a large number of rival crowns is a striking indication that the practice is sound, and the endeavor now is to attain to a greater degree of perfection in the application of the principle. But experience, I believe, has proved beyond a doubt that, as a rule, a root or tooth must be capped to permanently preserve from decay and insure stability of the attached crown. The band-crowns are the only ones which can be used on all teeth and roots on either jaw, under any arrangement of teeth, form of jaw, or demand of function. Other crowns can be used in certain cases, but are not capable of such universal application. That this work, however constructed, will be a failure in the hands of many, needs no demonstration. The desire for an acquirement of speed at the expense of skillful manipulation, is responsible for the larger part of these misfits.

No work that we now attempt needs as much care in detail and such thoroughness in manipulation. Being in so large a degree a mechanical operation, it demands for success exactness, and a concert-pitch effort each time.

The preparation of the roots or teeth is the first consideration.

All the exposed portions of tooth should be beveled carefully, so that the largest diameter shall be at the gum line, and no band should extend beneath the free margin of the gum tissue more than $\frac{1}{32}$ of an inch. Failure to observe these points will result in pockets from ill-fitting bands, absorption of gum and alveolar tissue and pericemental membrane, with consequent evil results. As regards incisors, and usually all other roots for porcelain-faced crowns, as much of the tooth structure should be preserved, with the exception of the labial or buccal wall, as is consistent with a proper occlusion, and avoidance of undue bulk. This will tend to prevent the temptation to drive the band deep to secure a grip. After proper beveling, a burr or Sheffield scaler should be used, especially with the incisors, to remove the enamel at the neck of the tooth and to secure such a form of the root as to insure the fitting of the band, no matter how tapering the root may be. By thus limiting the width of the band and making a form which can be fitted easily, a large factor in failures will be eliminated, for the many have attempted to fit roots as found, which is usually impossible. When the canals need enlarging, by driving in a plug of soft wood dipped in creosote, which can be easily drilled, it will serve as a guide and prevent the troublesome hole through the apical foramen at the side of the root. I have found that the use of a hand drill to obtain the depth desired, and a subsequent enlarging with the engine burr, obviates these surprising disclosures, as well as the painful and damaging degree of heat often accompanying the use of the engine. Having fitted and trimmed the band with careful reference to the form of the gum and alveolus, so that it extends an even depth in every portion, the proper bevel is secured for the labial or buccal face. A single piece of metal can be bent and soldered so as to make a closed cap, allowing the porcelain to occupy any position desired, and necessitating the use of cement, not for securing in position the crown or bridge, but simply to exclude moisture from the cap and roots. By using a rather large piece of solder and simply sweating the band together, the top can be soldered without the use of extra material, making a stronger cap, and one which will fit snugly to the root because of the absence of surplus solder in the cap.

The fitting of a porcelain face to a single crown can be done nicely in the mouth, if time permit, but when a number of crowns

or bridges are to be made, the taking of a bite and a plaster impression with caps in position, articulating as for plate-work, will secure greater accuracy and speed. By allowing the pins to extend as far out of the caps as the occlusion will permit of, having the exposed portion file-notched, they will be withdrawn with the impression, and the proper position maintained, so that the fit of the caps is not injured, and they can be soldered with the remainder of the case. It may be stated as a rule in bridge-work, that a case will go on with comparative ease, when in removing the impression the caps have remained firm in the plaster. Care should be exercised in preparing the roots and fitting caps to have them parallel.

A surplus of wax in taking a bite should be avoided, that a proper position on the caps and model may be secured. The use of a model of the teeth of the opposing jaw, with or without the wax bite according to the occlusion, gives still better results than wax alone. A proper occlusion of crowns or bridges is absolutely essential to permanency. By the use of cusps on the crowns, and by striking up surfaces for mastication from zinc dies made from models of the natural teeth, and soldering these surfaces to each dummy crown, it is as easy to get as perfect an occlusion of a bridge posterior to the cuspids, as with plain teeth in plate work. The surfaces should be filled with small balls of metal on the under side, to add strength and solidity and to avoid burning them in soldering. Very little solder should be used in attaching the surfaces to the teeth, so that wires of platina-iridium can be fitted without making too much bulk or exposure in finishing. The incisors should be soldered with a surplus for short bites, and ground to an occlusion in the mouth. In other cases, gold shoulders similar to cusps for gold crowns should be fitted and soldered with the final heat. The lengthening of crowned teeth and bridges, and of the opposing teeth, is very frequent, due to a lack of care in these particulars. In many cases of side bridges, an impression of the masticating surfaces of the opposing teeth can be secured, and a continuous surface swaged up and fitted after the porcelains are in position on the articulator. It should be waxed firmly in position and the edges burnished to the teeth nicely, to prevent pockets. The wax used for this work, on account of its tenacity, is prepared as follows: White wax, seven parts, gum damar four parts, and resin a little, according to the season, using more in summer. The crown-metal manufac-

tured for the writer stands so high a degree of heat, even at No. 32 thickness, that it is highly recommended, being inconspicuous in color and extra strong. (To avoid the appearance of advertising, the name of the manufacturer is withheld, except on application.) Care, in the instances noted, will secure the results named, and we may make crowns and bridge-work which will be permanent, for irritation from bands is avoided, and with proper occlusions exercise is insured, and this will maintain health.

The breaking of porcelains is urged as an objection to this work in bridges. This can be entirely obviated, and without the display of gold often seen on side bridges. After the porcelains have been ground into position and backed up, bevel the cutting edges as much as possible without changing the form, even if it be a cuspid or bicuspid face, and wax carefully on the bevel a piece of crown metal, No. 25 to 27, according to the strain, taking care to keep the wax from the joint, and allowing the metal to extend beyond the tooth, so as to be held firmly in position by the investment when the wax is removed, and while soldering. If the cutting edges of the incisors occlude, flatten and bevel slightly. When finely finished the protection will not be observed, and I have yet to see the first case of breakage in an extensive use of this simple device. In protecting bicuspid and molar faces, the protection must be secured in position before the masticating surfaces are fitted, which should be as near the cutting edge as the occlusion will permit. If properly finished, no gold will show, and the porcelain beveled in this manner is thoroughly protected from strain. Avoid getting wax on the face of the metal, so that the investment may protect it from solder and the porcelain from borax checks, compelling the solder to attach underneath, so that the face will need no finishing, except to grind down the portion beyond the tooth. It will also allow of a high polish for the surface, and there will be no thinning of the protection from careless grinding, as there would be if solder were allowed to flow on the face, and the tendency to discoloration at the cutting edge will be avoided.

An objection urged against this work is the formation of abscesses. It is understood that disease should be cured before attaching crowns. If the pulp canals are properly treated and filled before the insertion, and each occlusion is secured, there is little liability to diseased action. It is this ability to secure an occlu-

sion that makes the use of a crown desirable, and obviates the necessity of long, tedious operations in plugging, which, after all, amount as a rule to nothing more than replacing in part lost tissue without restoring to the teeth needed exercise by proper occlusion. Extensive contouring should be displaced in practice by fine crowns, for the benefit of both patient and operator. Crowning is not liable to be followed by periosteal irritation from the thousands of blows necessary to condense the precious metal.

To produce permanent bridge-work, the length of the teeth inserted should always be less than the original crowns, for the object is to decrease the leverage and strain, and this can be properly done, for this style of work of any magnitude is rarely undertaken except in persons past middle life, when the teeth are normally shorter than the full crown of youth. Care in this respect, and a proper occlusion that the strain may be distributed, and never opposing in the form of inclined planes, will not cause loosening or irritation. But the tying of teeth together is to be done with judgment, for as a rule the fewer teeth so united the better. Short bridges are successes, when the same united together might be failures. In full cases, four or six teeth in proper position are preferable to a greater number of attachments. Bridge-work, properly made, allows of less strain to the individual tooth than it ever has, except in a full arch of natural teeth. But the conditions so vary that it would be folly to attempt to recommend any definite rules, except the exercise of sound judgment and careful manipulation. When the writer sees the superior incisors supported by the canines, and the inferior molars and perhaps bicuspid lacking and no artificial substitute for them, and other cases constructed under similar conditions, he is not surprised that thoughtless ones judge the whole work a sham, and cry fraud. Operative dentistry, judged by the efforts of men like these, would earn no better reputation.

Granting that the objections presented have been, as we believe, successfully overcome, the monster stumbling block of uncleanness lies in our path. No work in the mouth, natural or artificial, is or can be absolutely clean. Pass a silk between the teeth, and is the result pleasing to your olfactory sense? Then what is expected is comparative cleanliness, so that the lack of perfection in this respect will not be detected by others or ourselves, except on severe test. But the claim is made, backed up by reason and experience, that

bridge-work properly made and adjusted is capable of being kept free from uncleanness easier than the natural teeth. In criticism, the same rules that apply to the natural teeth should apply to bridge-work. Because patients neglect their natural teeth, allow stain and deposits to accumulate, we do not advise removing the teeth, but thorough cleansing. So with this work.

To begin, the parts of a bridge should be perfectly fitted and soldered, and when finished present a continuous smooth surface entire. If there are pits from excessive use of borax, pockets, crevices, etc., the case should be finished and put through the fire again. The greatest care should be exercised to have the metal portion of the bridge entirely free from the gum tissue, so that a soft brush can without difficulty reach every portion of it. The porcelains should stand off from the gum, so that water can be used to clear out saliva or occasional lodgment of food. By coating the cast with thick shellac varnish before grinding the porcelains in position, the proper distance will be secured. It is only in the anterior part of the mouth, where the form of the ridge will permit of it and the perfection of speech demands it, that the porcelains should pass by the ridge to any considerable extent. Care in the continuity of surface and form of the bridge, so that the bevel from the masticating surface to the porcelain shoulder shall be regular and without pockets, will produce bridges, (and my experience is uniform on this point,) that can be kept perfectly clean, and with less effort than would be demanded to secure the same results with the natural teeth. But if there is any doubt on this point, is there any reason why the patient should not have the bridge cleaned and polished once in six months or a year, and is there any doubt of his ability to thoroughly cleanse it if properly made? The advantages of this work are so apparent that the slight disadvantage of having to take care of it is hardly worth consideration. The majority of bridges may undoubtedly have been improperly formed and defectively and carelessly finished, so that it is no wonder they have nearly overcome us with their stench, but our effort should be, in view of the great benefit derived from properly constructed bridges, to endeavor to span this cess pool of primitive bridge-work to the solid accomplishment of what we know can and should be done. The successful application of the crown system, when all the conditions above are observed and the work constructed as indicated, will de-

pend upon the conscientious judgment of the operator. Its real domain is the restoration of teeth literally worn out, when we already have a good foundation, and the restoration at the time of life indicated will be permanent. If bridge-work is adjusted much before middle life, the conditions will, in all probability, so change that its permanency must be considered doubtful, and very little should be done, except that which is absolutely demanded to preserve teeth until the time for permanent work has arrived. The indiscriminate use of bridge-work as a practice can result in nothing but failure. The strain on roots is greater in young persons as the leverage is stronger, and while exceptional cases may prove successful, the real use and place of this work is the restoration of mouths to proper appearance and function when the probability of change of condition is not a factor.

For patients whose teeth are chalky, brittle, or exceptionally prone to decay, it would seem much better practice to preserve each tooth by careful crowning, than to repeatedly fill and finally lose valuable teeth, while there is much less pain and expense to the patient. Such work brings to the operator a class of teeth which he can handle with far more success than is now generally attained.

Another cause of failure in crown work is the attaching of two or more dummy crowns to a single support. An incisor root can, if care is used to prevent direct strain on the dummy, carry a single tooth, but never more, and no root posterior to the canine should ever be expected to support the strain of mastication on more surfaces than its own crown presents. Such and similar devices only serve to bring discredit on a system, which, if properly practiced, would produce beautiful and permanent results.

In such cases as it may seem desirable or necessary to remove at the will of the patient, the use of movable bridges can be resorted to, and this branch of crown work is susceptible of indefinite modification to meet the varying requirements presented. In several cases where the patients were inveterate chewers of tobacco, and whose mouths indicated unusual neglect as regards cleanliness, the writer has made movable bridges which have proved, in trials of from six months to over two years use, a most gratifying success, in both upper and lower jaws. The construction of these cases requires still more time and care than the stationary bridge, with

special attention to the strength of each part, to avoid change in removing, cleansing and readjusting. The use of movable appliances involves the preparation of the teeth or roots as for ordinary crown work, and the capping of them with thinner metal than usual, say No. 36, as there is no strain on the caps, and bulk is to be avoided. Where pins are to be used, a piece of the metal can be fitted to the squared pin-wire and soldered neatly on the outside, making a square tube, which should be closed at the apical end, and the length having been ascertained, it is placed in position and soldered to the hole made in the cap for it, and the cap and tube thus united thoroughly cemented to the root. In constructing large cases of bridge-work of any style, as few pins as possible should be used, so that the bridge may be adjusted with as little strain as may be. Excessive drilling of the roots should be avoided. Few bridges require more than two pins, and many only one, especially when gold crowns are included, and there is a good occlusion on the sides. The practice of putting a pin in each root involves more work, with far less nicety of accomplishment. When all the caps are nicely fitted, the use of so many pins only results in cutting away teeth and roots to get the case on, ruining what otherwise might be a perfect operation. I have a case of six inferior incisors and a first bicuspid, single crowns, on roots in all of which are live pulps, allowing only the neat beveling and fitting of caps, and the use of porcelains, so that no gold is exposed. This I did three years ago, and upon examination since beginning this paper, although they have had all the work of mastication owing to loss of the remaining natural teeth, they are as healthy and strong as when the work was done. If single crowns will stand this strain, bridges with caps as carefully fitted and with as proper an occlusion, should need no extra pins. In movable bridges, where the squared pin is to fit into a metal tube as closely as possible, two should be the limit, and dependence should be placed on the proper construction of the other fastenings, or second caps. To go into the details of the work would extend this paper beyond my time or present opportunity. The only purpose is to indicate how the work is done, and then special instruction should follow. This will avoid much costly and disappointing experimentation on valuable patients.

Due care in the use of unnecessary pins will stop the unwarrantable, sinful destruction of pulps. I have put as high as fifteen

crowns in one mouth, the incisors and bicuspid crowns porcelain-faced, and preserved the pulp in each tooth. When pulps are to be removed, it can be done with little or no pain by obtunding according to the conditions. But arsenic should not be used, or the liability of chronic ulceration, or gradual breaking down of the pericemental membrane will result.

When teeth or roots have slightly loosened from lack of or a mal-occlusion, a restoration to correct conditions by the use of crowns has been followed by happy results. The restoration of exercise, or the proper application of the strain is commendable, but those whom the worship of the golden calf has transferred into fit companions for the long-eared quadruped, and who place crowns and bridges on roots suffering from pyorrhœa, chronic ulceration and absorption of root tissue, and on roots without the possibility of occlusion, bring discredit on this work, as they do on all other operations requiring skill and the conscientious use of judgment, and it is no wonder many exclaim “uneasy lies the head that wears a crown.” As a rule, all dental operations are performed too hurriedly, and when criticism is made and greater care and a nicer class of work recommended, the general excuse is that “people won’t pay for it.” I believe from observation that he who constantly gives to his patients his very best efforts, and always persists in demanding their acceptance of the best styles of work, will find that his only difficulty will be to meet the demand for his services. A reputation of this kind takes time to develop, but no capital yields such rich, certain and constant dividends.

When for any reason a clasp plate is to be worn, by capping the teeth to which the clasp would be fitted the permanency of the operation is assured, the teeth protected from wear, a better fit and grip of clasps and a smaller plate made possible, and the patient saved the annoyance of sensitive surfaces, decay, and loss of valuable teeth. By a proper apposition of the edges of the band before soldering, all crowns will have the largest diameter just below the masticating surface. But when used for clasping, the bulging should be marked and regular, otherwise in time a slight dropping of the plate might follow from continued use, and a slipping on and off of the clasps.

Crowns will also be found of great value in correcting irregularities, when the age of the patient or the character of the case does

not permit of changing the position of the tooth or teeth by the usual appliances.

Much has been said and written about the effect of pulpless teeth remaining in the jaw. While my practice, as indicated, is not to destroy except when absolutely necessary (and with continued experience the necessity diminishes), yet the results have been so satisfactory when the pulp has been properly removed, and I have seen so many cases where pulpless teeth have done good service from ten to thirty-five years, and still remain in good condition, that I believe that with proper support and occlusion annoyance will be the rare exception rather than the rule.

Filling of teeth is decidedly a temporary operation compared with crown work, either in live or pulpless teeth, and must remain so until our researches shall have developed a practice of prevention of decay, rather than remedying the effects of it by fillings which are decently permanent only in cases of the most favorable description. As long as this is a fact, the grafting of indestructible crowns on roots perfectly protected from decay, or the capping of partially destroyed crowns likewise protected, will, if faithfully practiced, give to our patients sets of teeth which will forever protect them from the pain and discomfort of plates, preserve the expression of the face and function of the mouth, and save many from the torments of dyspepsia and lack of ability to properly masticate or enjoy food.

With a recognition of the value of this work our success will often be a fact, where now our best efforts are apologies, and it will enable the careful mechanic-dentist to produce work which in appearance and use cannot be rivalled by the devotee of tedious gilded contouring. It will do away with the resort to unsightly, incomplete operations with the amalgams of the "new departurists," who have not the skill or wisdom to hide their tarnished efforts. There is real merit in both horns of this dental dilemma, but the adoption of the crown work will serve to prevent being gored by either of them. The crown is truly the "golden mean." Its adoption is not a radical step, but at this time is eminently conservative. In closing, I am reminded of a couplet often quoted, but apropos in this connection :

Be not the first by whom the new is tried;
Or yet the last to lay the old aside.

PAIN OBTUNDERS.

BY A. W. HARLAN, M. D., D. D. S., CHICAGO, ILL.

READ BEFORE THE INDIANA STATE DENTAL SOCIETY.

It has long been the desire of every dentist to excavate cavities in teeth painlessly, but the fruition of that desire I fear has not yet arrived, except in pulpless teeth and such superficial cavities as are found in the fissures of bicuspid and molars. It has been stated on several occasions that, by drying a cavity and the use of a sharp excavator, all that is necessary for the obtunding of the dentine has been done, but such is not the fact in all cavities. I believe that it is essential to thoroughly dry cavities in general before much excavating has been done, in order to avoid producing pain, but complete dryness is not sufficient, not even when the air is continually heated.

It is not practicable to produce a continuous stream of heated air unless you have it compressed, or have a compressor attached to a steam heating apparatus, or have a foot-bulb which a water or other motor will put in motion, so as to have a steady stream. It is not certain that the use of heated air for any considerable length of time may not be injurious to a tooth, by driving off too much moisture and checking the enamel so seriously as to produce leakage around a gold filling. I think I have seen evidences of this in pulpless teeth, at any rate. The only practical method of using heated air for obtunding sensitive dentine is to direct the jet on the cavity for a half to a whole minute, and then introduce with a pipette or dropper the obtunding agent, which may be alcohol, ether, carbolic acid, in a generous solution, or other local anæsthetic. This should be continued for about two minutes, and in most cases the patient will not shrink when the excavator is used. The rubber dam must be used in every case. This method of using heated air is, I believe, entirely new and original with the writer. Every one present must remember some case where it seemed impossible at the time to properly prepare the cavity in a tooth so that a respectable operation could be performed. This method will undoubtedly help some one in just such cases. You cannot accomplish much by using an ordinary bulb-syringe. One of Glow & Young's air compressors, or C. Beseler's, or some other maker, whereby you can have a pressure of from forty to sixty pounds to the inch, will be all that is needed. If the heated air is directed from

the cylinder, the pipe or taps must be protected with a non-conductor by having a coiled tube about eighteen to twenty-four inches from the mouth of the patient; a small gas jet or spirit lamp will produce all the heat needed. As the stream of air comes from the compressors through the heated pipe, you can have a small thermometer attached, and can easily regulate the degree of heat; that portion of the pipe nearest the mouth must be covered with a non-conductor, to protect the lips and face. A sheath of asbestos paper or bone can be used, so that it need not touch the heated pipe.

In the use of any agent for obtunding sensitive dentine, dryness is absolutely required. Time is another factor; I do not always feel that I can afford to wait for an obtunder to act, and many patients certainly cannot, therefore we seek for a rapid and safe method of depriving dentine of its sensibility. No doubt you are all acquainted with the most recent addition to the list of obtunding agents. This includes the various forms of Cocaine, of which I shall say nothing, Cannabis Indica, and the Oleo-resin of Kora-Kora. In times gone by I have experimented with and used the ethereal oils, separately and combined, carbolic acid crystals both cold and heated, cetolized potash and glycerine, chloride of zinc, sulphate of zinc, camphors, including menthol, hydrate of chloral, ether, alcohol, tincture of aconite root, and other vegetable tinctures, prepared chalk, and other antacids, iodoform, iodide of potassium, glycerine, chloroform, and many other agents, some of which were secret anæsthetics, and hence valueless. Occasionally some one of the above substances would prove of some value, but when most needed they could not be relied upon. The principal difficulty has been that obtunding agents either required too long a period of waiting to obtain results, or they were themselves productive of pain. The latter is particularly true of those drugs or agents that rapidly abstract water, or are escharotic. For these reasons the majority of the above cannot be relied upon for destroying sensibility in dentine.

Preparatory to the use of an obtunder the cavity should be opened with a chisel and the debris washed out with warm water, the rubber dam should then be adjusted, and if the necks of the teeth are sensitive or the gums tender, they ought to be painted or swabbed with the tincture of cannabis indica slightly warmed. The cavities should then be dried, after which pellets of cotton moistened with alcohol may be introduced and quickly removed, and the obtunder, whatever it may be, should then be placed in the cavity

and allowed to remain while you are operating on some small fissure or other non-sensitive cavity. By so proceeding you inspire the patient with confidence, gain time for the drug to act, and allow the alcohol to evaporate, which is in itself a tolerable obtunder. By preference, and from confidence in the drug, I am still using the fluid extract of *cannabis indica*. I find that, used in the above manner, it acts more rapidly than any other known drug which is not injurious to the teeth. In previous papers I have cautioned against too free use of the fluid extract, as it is poisonous in large doses when accidentally used, one-half to one minim being the ordinary dose, while five to twenty minims of the tincture may be given with safety.

You will find that the tincture of *cannabis indica* and the fluid extract are extremely valuable in other directions than that of obtunding dentine, as you can open an abscess almost painlessly by pricking its surface two minutes before introducing the lancet. By soaking a pulp with the fluid extract for a few minutes you can remove it without pain, provided you have free access to it, so that the brush can be plunged into the canal without unnecessary fumbling around the entrance. You can use the tincture for injections around the root of a tooth, when there are fine deposits on the sides which would cause great pain in removal without its use. I habitually make great use of it with perfect results. I have extracted a few roots of teeth by injecting a drop on each side, and also painting the gums adjacent to the roots, and waiting for five minutes before removing them. The tincture should be warmed before using it for this purpose.

The Oleo-resin of Kora-Kora I have used for obtunding the soft tissue and dentine to a limited extent, but it is so disagreeable to use, being greasy and having a bad taste, that I am at present seeking for some method of preparing it so that it will not be so nauseating. You can get it from Parke, Davis & Co., and see what merit it possesses for the above purposes. So far, I am certain that it is less efficient than *cannabis indica*. In conclusion, allow me to say that at present it is possible to prepare and fill cavities in teeth without the destruction of the pulp, which, in many cases before obtundents were properly used, it was impossible to fill with any degree of satisfaction to the operator, and often such operations were of little benefit to the patient.

SETTING TEETH IN ARTIFICIAL SOCKETS.

BY DR. S. S. SOUTHWORTH, SACRAMENTO, CAL.

I have recently spent a few hours in Dr. Younger's company, talking over his numerous operations, his methods, failures and successes. I have talked with other dentists in San Francisco who have seen his operations in transplantation in natural and artificial sockets, and they all pronounce them successful. One of the dentists had worn one of the replantations for a year, and it was apparently as firm as the contiguous ones. In this case, if I remember correctly, a root was extracted, the canal filled, an artificial crown put on, and it was then replaced in the socket. This may not be a new procedure, but at least it is an ingenious operation, and one that is properly appreciated by the patient.

Learning that Dr. Younger would give a clinic at the State Society meeting, my son went to San Francisco last week, and was in attendance during the session. He returned very much interested in the "gimlet hole" business, and already has a patient prepared to sacrifice the inestimable comforts of a lateral incisor on a rubber plate. I take down his own words as a witness of Dr. Younger's method :

"I was present at Dr. Younger's clinic on Wednesday of last week, and was greatly surprised at the simplicity of the operation. The patient was a San Francisco dentist, who lost a left superior first bicuspid, fourteen years ago. The tooth used for implanting had, three weeks before, been extracted from the over-crowded arch of a lady patient. The pulp cavity and canal was filled with Hill's stopping, and the hole in the crown with gold. The apical end of the canals were closed with gold screws, the ends being smoothed and neatly polished. It was kept in one of William's cylinder bottles filled with a liquid composed of two minims of merc. chloride and one thousand of water. The bottle rested in a pan of warm water kept at a temperature of 110° to 115°.

"The first operation was gouging out a piece of the gum with sharp chisels, corresponding to the size of the required socket, but a trifle less in diameter. After this the gum was dissected from the alveolus for a few lines in all directions. A trepan of suitable size was then placed in the engine and a socket cut about half the length of the tooth. The cutting instrument had a diameter equal to the

antero-posterior diameter of the root, and two adjoining cuts were made, one on the lingual and one on the labial side of the socket, having no partition between them, and leaving a socket approximating the shape of the tooth. The debris was syringed out with a cold solution of the aqua-mercuric liquid from a large bottle standing on a side table. The upper part of the socket was cut out with a smaller trephine and shaped to receive the end of the bifurcated root. The after shaping was done with conical shaped corundum points.

“The space between the adjoining cuspid and bicuspid being narrow, the crown of the borrowed tooth was ground off so as to slip into its new position without crowding. Frequent applications were made to see if the tooth fitted snugly, and the tooth always replaced in the warm solution. At the end of an hour and a half the doctor dried out the socket, placed the tooth in position and pushed it home with a crotched stick, as one would do with a pivot operation, and invited the forty dentists present to inspect it. In my examination I found the tooth so solid that it was impossible to remove it without an instrument. It was whiter than the adjoining teeth, but time will change the color.

“I saw Dr. Cummings, the dentist operated on, the following day, and every day during the week, and he assured me he had suffered more pain in getting a tooth filled than the whole operation caused, and was agreeably surprised at the small amount of inflammation which had followed this novel case of heroic surgery.

“Recognizing that the success of an operation depends on the results obtained, Dr. Younger had a patient at hand for whom a similar operation had been performed over a year ago. The patient was a married lady, I should think thirty-five years of age. In this case a superior second bicuspid had been implanted in an artificial socket, and the owner of it was so proud of the success that she took very great pleasure in not only allowing us to look at it and test its stability, but also in exhibiting two inferior molars which she was carrying around in her pocket-book, subjects for Dr. Younger’s manipulative skill in the near future. The color of the bicuspid was perfect, and I could not distinguish any difference between it and its neighbors.

“I am too young a practitioner to discuss the question as to whether or not bone cells can be produced without the aid of periosteum, but I am satisfied that teeth can be implanted in “gimlet

holes" in the alveolus and become solid in their attachment, and I further believe that a bone formation does take place around the root, filling the interstitial spaces.

"I learn on the most credible authority that Dr. Younger has nearly one hundred successful cases of this character, and I know that he is giving this practice his principal attention. If you visit his office now, he will show you a box of teeth which he has collected from his professional friends and during his own practice, and he is ready to select one for any case which presents itself, without regard to how long the tooth to be implanted has been extracted, so long as the dried pericementum is attached."

I write this in a hurry, for I think you ought to have it, and you can depend upon it as being in accordance with facts.

SYSTEMATIC STUDY.

BY J. D. MOODY, D. D. S., MENDOTA, ILL.

In the editorial entitled "Post-Graduate Study," in the *PRACTITIONER* for June, you suggest "courses of lectures on definite themes somewhat after the manner of the Chautauqua Literary Course." I desire to call attention to a plan of study which, until something better is provided for us, will offer to the dental student a well arranged course of scientific work. While not exactly meeting the needs of a dental student, yet, in the absence of any course especially prepared for him, it will meet the want very fully, and his work will not have been thrown away, should he at any future time desire to take up a course especially prepared for him. By dental student I mean one who has an inclination to study and who makes an attempt to pursue it, whether preparing for college or engaged in practice.

The plan of which I speak is a course of study arranged by the authorities of the Chautauqua University, to be carried on by correspondence. It is a part of the regular curriculum of the School of Biology, to be taken up and pursued as special work, independent of the other branches in that course. With the aid of a fair microscope and the directions of the tutor in charge, a great deal of pleasure and profit can be obtained from it, and it will greatly enlarge the mental horizon. He who follows it will be laying foundations of permanent value upon which future work can be built. It will

give a better understanding of much with which we have to do, and tend towards a real satisfaction with ourselves.

I know whereof I speak, having just finished the first year's work myself. It is arranged to occupy four years, but the student is not limited as to time. He can go faster or slower as he finds himself best able to do.

The course is as follows:

First Course :	{	Elementary Biology.
		Dissection of Fish.
		Dissection of Chelonian.
		Dissection of Bird.
		Dissection of Rat.
Second Course :	{	Botany.
		Osteology { Human. Comparative.
		Histology.
		Physiology.
Third Course :	{	Botany.
		Comparative Anatomy.
		Embryology.
Fourth Course :	{	Animal Life.
		Origin of Cultivated Plants.
		The Geographical Distribution
		of Animals and Plants.

The syllabus of the first course is as follows:

(A) Plants.

Yeast.	Chara.	Mucor.	Bean Plant.
Penicillium.	Fern.	Spirogyra.	Indian Corn.
Protococcus.	Bacteria.	Nitella.	

(B) Animals.

Amœba.	Cray Fish.	Star Fish.	Frog.
Hydra.	Perch.	Earth Worm.	Pigeon.
Sea Urchin.	Terrapin.	Oyster.	Rat.
Mussel.	Sponge.	Grasshopper.	

(C) Botany.

Elements of Systematic Botany and Plant Analysis.

This work will be found intensely interesting to any one who will take it up. Full particulars can be had by addressing R. S. Holmes, Registrar, Plainfield, New Jersey. The school year begins in October, and ends in June.

I hope that the day is not far distant when some similar plan, modified to suit the needs of the dentist, will be arranged for us by some competent authority.

Reports of Society Meetings.

AMERICAN DENTAL ASSOCIATION.

TWENTY-SIXTH ANNUAL MEETING, HELD AT NIAGARA FALLS,
AUG. 3, 4, 5 AND 6, 1886.

REPORTED FOR THE INDEPENDENT PRACTITIONER BY "MRS. M. W. J."

The twenty-sixth annual meeting of the American Dental Association was held at Niagara Falls, Aug. 3, 4, 5 and 6, 1886.

The members were called to order at 11 A. M., Tuesday, Aug. 3, the President in the chair.

OFFICERS.

President—W. C. Barrett, Buffalo, N. Y.

First Vice-President—L. C. Ingersoll, Keokuk, Iowa.

Second Vice-President—A. T. Smith, Minneapolis, Minn.

Recording Secretary—Geo. H. Cushing, Chicago, Ill.

Corresponding Secretary—A. W. Harlan, Chicago, Ill.

Treasurer—Geo. W. Keely, Oxford, Ohio.

Executive Committee—J. N. Crouse, Chicago, Chairman; A. M. Dudley, Secretary.

Local Committee of Arrangements—S. A. Freeman, Buffalo, N. Y.; Geo. L. Field, Detroit, Mich.; J. W. Wassall, Chicago, Ill.

The roll was called, and one hundred and four members found to be present.

The reading of the minutes of the last annual meeting, held in Minneapolis, was dispensed with, they being already published and in the hands of the members.

At that meeting a resolution was offered to amend the constitution in such way as to substitute the 4th Tuesday in August in place of the 1st, as the time of meeting.

The resolution to that effect being the first item of miscellaneous business, was put before the body for discussion. A motion to lay it on the table was carried by a large majority.

Another amendment to the constitution, offered by resolution at the last meeting, putting the selection of place of meeting in the hands of the executive committee, was, on motion of the original mover, indefinitely postponed.

A resolution offered by Dr. A. H. Thompson, Topeka, Kansas, amending Sec. 2 of Art. VI, so as to allow members to join two or more Sections instead of being confined strictly to one, and otherwise altering that section, was, after some discussion, with suggestions of amendments and alterations, laid upon the table temporarily.

Dr. Crouse—Said that it was so difficult to get the members to work even one Section, that it was not probable any would wish to join two.

Dr. Thompson—Thought it would be beneficial by distributing the few workers among more Sections.

Dr. J. S. Marshall—Thought there should be no restrictions upon the amount of work a member might perform. The Sections should be open to all.

Dr. Geo. H. Cushing—Called attention to the fact that volunteer papers were referred to the Section to which they pertained, the author having all the privileges of that Section, except in electing its officers. There was no limit to the number of papers, and consequently of Sections, in which any man might work.

The printed programme, subject to such changes as might be deemed necessary, was submitted by the committee of arrangements as a partial report, and on motion, accepted as such.

The committee on publication reported that the transactions of the last annual meeting had been published, as usual, by the S. S. White Co. They had been substantially bound in cloth and mailed to all members in December. The committee expressed their obligations to Mr. Hise for his valuable assistance. They also reported that two Mss. copies of the full proceedings of 1883 had been made for the Congressional Library, as per resolution.

An itemized statement of receipts and expenditures was presented, showing the sum of \$21.40 due the committee.

The report was received and referred to the Auditing Committee.

The question of indebtedness for back dues was discussed at length, a member having been confronted with a claim for dues of 1875 and 1876, on presenting his credentials as delegate from the Michigan State Society. He stated that he had never been a permanent member; had always paid his dues when present as delegate; had never been notified of the indebtedness, and had never received any volume of transactions.

Drs. Taft, Allport and others, considered that if the books showed these things to be as stated, there could be no indebtedness on the part of the member.

Dr. Crouse said that local societies could not dictate whom the Association should receive as delegates. That the constitution declared that no delegate could be received with unpaid dues, and that the gentleman not having been accepted as delegate had no right to the floor.

Dr. Taft said that unless the records of the Association showed that the gentleman had declared his intention of becoming a permanent member, there could be no indebtedness.

The subject was, on motion, referred back to the Committee on Credentials, who later in the day reported that the error had arisen from confusion in the books due to transference from one treasurer to another.

Dr. Metcalf was therefore announced as delegate from the State Dental Society of Michigan.

The Treasurer submitted an itemized report showing :

Balance on hand Aug. 1885.....	\$1,948 95
Dues received at Minneapolis.....	1,020 00
Additional receipts.....	440 00
	<hr/>
Total	\$3,408 95
Disbursements.....	789 85
	<hr/>
Balance on hand.....	\$2,619 10

This gratifying financial exhibit was greeted with applause.

The President then delivered his annual address, which was received with the applause becoming a scholarly production, and was, on motion of Dr. Dorrance, ordered placed in the hands of the Publication Committee, and spread upon the minutes.

On motion, adjourned to 8 P. M.

Immediately after adjournment the various scientific sections met for organization.

During the afternoon various clinics were held, and appliances exhibited, in the different rooms of the Casino building and at the hotels. The dental depots and manufacturers' exhibits were also open at all times between the sessions.

EVENING SESSION.

The Association was called to order again, by the President, at 8.15 P. M. The minutes of the morning session were read and approved.

Dr. Thompson moved a reconsideration of the resolution amending the article of the constitution having reference to work in sections.

The resolution, which had received some verbal alterations, was again discussed, and finally adopted.

The resolution provides that each member shall join one, and may join two or more Sections; also that at roll-call, on the second day, he shall answer to his name by giving the number of his Section or Sections in place of the customary "here" or "present."

There being no further miscellaneous business, the Sections were called in regular order. The list was gone through with, but not one responded as organized and ready to report.

A motion to adjourn was lost.

The roll of Sections was called a second time.

When Section VII—Physiology and Etiology—was reached, Dr. A. H. Thompson, secretary, reported a list of papers which had been presented to and accepted by the Section. The authors were not ready with their papers. Being last on the list, they had not expected to be called upon first.

The roll of Sections was called again.

Dr. W. B. Ames, secretary of Section I, Prosthetic Dentistry, Chemistry and Metallurgy, reported that the Section had received and approved two papers; one from Dr. W. H. Trueman, on "Recent Improvements in Vulcanizing and Vulcanizers;" and one from Dr. Haskell, on "Needed Improvements in Mineral Teeth." They desired to call attention to a number of valuable papers published in the journals of the past year, and notably, one read before the Kansas Dental Society, and one read before the Connecticut Valley Association. They called attention to the great improvements in carved porcelain blocks, and to the more general use of continuous gum work, due to the improvements in small furnaces, to the skill and ingenuity developed in crown and bridge-work, and to various small appliances used in the mouth, particularly matrices and separators. They commended removable bridge-work, spoke

approvingly of a new material for taking impressions, composed of Potter's clay and glycerine, of a new fusible metal composed of sixteen parts bismuth, twenty parts tin and six parts lead. They directed attention to the new methods of Dr. Melotte, on which clinics would be given, and to the continuous gum furnace of Dr. C. H. Land. They requested the consideration of the report before the reading of other papers.

Dr. Wm. H. Atkinson—Offered an objection, saying that it would be foisting the work of the Section upon the general body.

Dr. C. N. Pierce—Thought the papers should be read first, that the whole subject might be discussed at once, and passed.

The chair decided that the papers should be read previous to the discussion of the report.

Dr. Ames, Secretary of the Section, then read the paper presented by Dr. Trueman. This was a thorough and comprehensive treatise of the principles involved in the process of vulcanizing, and their application in the New-Mode Heater and the Seabury Vulcanizer.

Dr. Haskell's paper described graphically many needed improvements in porcelain teeth, in shapes, size, color, etc.; the changes needed in order to give them individuality of style, it being now found especially difficult to match the natural teeth, where partial plates are required. Many of the styles now made are altogether too small for any but an infant's mouth. Others are so large as to deserve the name of horse-teeth. There is not the proper blending of color in the individual teeth, nor the peculiar gradation of color found in the full set of natural teeth. Variations are needed, too, in the shape and arrangement of the pins, in the thickness and quality of the enamel, etc. It was recommended that a committee be appointed to confer with the leading manufacturers on this subject.

Dr. W. H. Dorrance read a paper in continuation of a former report, giving the tabulated results of wearing plates of the vegetable bases, rubber and celluloid. Leaving out of consideration the results of injuries clearly traceable to uncleanness, or the mechanical injury from badly made or ill-fitting plates, he found, by these continued observations, that the percentage had increased to fifty-five per cent. In every case radical improvement followed the substitution by metal plates.

Dr. Dorrance read another short paper on Alloys. He gave the formula of a solder of chemically pure metals: silver, one part; zinc, two parts; copper, three parts. This makes a remarkably white alloy, and is used in the proportions of one part of the alloy to two, three or four parts of scrap gold, fusing the gold first. The alloy follows the color of the gold used, whether red or yellow.

Section I. was declared opened for discussion.

Dr. C. N. Pierce—Inquired to what the injuries, caused by the plates, were attributed?

Dr. Dorrance—Considered them attributable to the retention of animal heat, due to the non-conducting properties of the base. If due to uncleanness, or badly made plates, the substitution of metal plates would not afford a remedy. He did not consider the coloring matter of rubber a factor.

Dr. Pierce—Asked to what he attributed the difference in results from black and red rubber?

Dr. Dorrance—Had not found much difference. He had substituted black rubber without benefit.

Dr. J. G. Friedrichs—Said that at the rate of fifty-five per cent. named, fifty out of every one hundred people wearing rubber plates would be suffering, in which case there would be ten millions sore mouths in the country, and the facts alleged patent to every practitioner of dentistry, and this he was not prepared to admit. If this were the case the material would not be tolerated by any first-class practitioner, which shows the folly of such conclusions.

Dr. Louis Ottofy—Said that the recent investigations of Prof. G. V. Black were very conclusive, and proved that micro-organisms were found under all plates alike, regardless of material.

Dr. Geo. H. Cushing—Said that rather misrepresented Dr. Black, whose microscopical investigations proved that micrococci were found under all *unclean* plates, though rubber and celluloid were much more likely to be the home of micrococci than metal.

Dr. W. H. Morgan—Said that this Section had insisted, at the last meeting, upon being afforded opportunity for discussion. It was usually crowded out at the close of the session. All that had been said to-night was a mere rehash of what had been repeated for years. It was a mere inference that the mouth eliminates heat, or that the natural heat of the mouth would be destructive to its own tissues. He had hoped that the Section, having

had a whole year for preparation, would have presented something worthy of consideration.

Dr. James Truman—Said that for a number of years mechanical dentistry had been almost a lost art, and was now in a transition state. He feared that the advocates of bridge-work were going too far. They did not stop to consider the future results of those permanent bands upon the teeth, which are driven home as upon an anvil, impinging upon and irritating a tender, sensitive membrane, violating physiological law and inducing pathological conditions which are not easily overcome. They were going too fast and too far, daily doing work which is liable to result in permanent injury, loosening and destroying teeth. The principles involved should be thoroughly ventilated by the Association.

Dr. Atkinson—Expressed his joy in at length hearing one man speak of principles. When bold statements are made, however, it was essential to have a strong foundation of facts. It was a mistake to say that the pericementum was irritable and tender. If there was one tissue in the human body that would bear abuse, it was connective tissue.

The whole discussion revealed lack of knowledge of principles. Crowns and bridge-work were inserted without inquiring as to how much loss there was at the end of the root, or how much softening around it. Bridge-work, when properly constructed and inserted, is the *ne plus ultra* of replacement.

Dr. F. H. Rehwinkle—Announced that the Central German Association of dentists was now in session, at Franfort-on-the-Main, and moved that a telegram of fraternal greeting be sent, signed by the officers of the Association.

Carried.

Dr. Geo. H. Cushing had a communication from the Librarian of the Patent Office Reading Rooms, London, requesting copies of the Proceedings of the Association, for the benefit of some two hundred daily readers, men especially interested in scientific patents and inventions.

On motion of Dr. Taft, the Secretary was instructed to comply with the request, by forwarding as complete a set of Proceedings as possible.

On motion, adjourned to 9 A. M.

(TO BE CONTINUED.)

PENNSYLVANIA STATE DENTAL SOCIETY.

EIGHTEENTH ANNUAL MEETING.

REPORTED FOR THE INDEPENDENT PRACTITIONER BY WM. H. TRUEMAN, D. D. S.

The Pennsylvania State Dental Society convened at the Mountain House, Cresson, on Tuesday, July 27, 1886, and was called to order by the President, Dr. J. W. Rhone, of Bellefonte.

The morning session was occupied by routine business.

At the opening of the afternoon session the President read his address, which was somewhat of a new departure. In place of the usual platitudes of such addresses, the doctor gave a brief and concise *resumé* of various matters of business originating or referred to at the last session, and requiring further attention at this. The good effect of his timely and judicious suggestions in the prompt and orderly transaction of business, was seen through the entire session.

Dr. E. H. Neal, of Philadelphia, read a paper entitled "A Review of the Causes of the Decline of Mechanical Dentistry." He remarked that, looking over the pages of our dental journals, one would be led to suppose that mechanical dentistry was fast becoming a thing of the past; indeed, so little has been written upon it, and so seldom is it referred to in our society meetings, that it seems to have ceased to be of special interest to many practicing dentists.

Quite recently, however, considerable interest has been manifested in it by the introduction of bridge-work. This he considered a step in the right direction, although it is, perhaps, too early to speak decidedly as to its merits. While there is much in it to commend, it is not without faults. It is frequently spoken of as unclean, opposed to sound mechanical principles, and it is contended that the severe strain imposed upon a few teeth will soon dislodge them.

He contrasted the dental laboratory of thirty years ago with that of to-day. Then its secrets were carefully guarded, and its recipes and processes either brought a high price or were communicated under a pledge of secrecy. Then the preservation of natural teeth received far less attention, and the insertion of substitutes was a much more prominent feature of dental practice than at the present time. The teeth were usually made to suit each case, the dentist

not only carving the teeth he inserted, but also preparing the body, enamel, etc., from the crude materials. He exhibited a number of specimens of his own and his father's handiwork, all made more than thirty years ago, and all excellent specimens of that class of work, rivaling in appearance and expression the best that is being produced at the present time. He described the method of making the old-style riveted blocks, and thought that in skilled hands that now antiquated method was capable of better results in expression and usefulness than is usually obtained with moulded teeth. They had an individuality that is so often lacking in artificial dentures of more recent date. He referred to the time required to become a skilled carver of teeth, and the constant care required at each stage of the process; of the difficulties to be met and surmounted, and the constant liability to accidents requiring hours of labor to repair. He regretted that block carving was not more thoroughly taught in the dental colleges, as to produce satisfactory results so many cases require the teeth to be specially carved to suit them.

He suggested that the introduction of easier methods had developed a carelessness and indifference to the minuter details of constructing artificial dentures, and had in a measure passed that department of our specialty into the hands of those who did not appreciate the varied conditions to be met, but regardless of the anatomy of the mouth, its varied pathological conditions or the peculiarities of the patient, used teeth of the same mould, size and color, for all cases.

He then referred to the constantly increasing attention given to the preservation of the natural teeth. This has not only materially reduced the necessity for artificial substitutes, but has also, to a very great extent, withdrawn talent and skill from the laboratory, leaving that department in far inferior hands, the easier methods of the present having failed to develop the same skill as did the severe training of the past.

In conclusion, he suggested the following causes for the decline of mechanical dentistry:

First—The efforts of dentists, and the knowledge diffused by numerous publications upon the subject, have directed public attention to the importance of preserving the natural teeth.

Second—The vast improvements in material and implements have rendered operations looking to the preservation of the natural

teeth more useful and reliable. For this the thanks of patients and operators are justly due to inventors and manufacturers who have so well supplied our needs.

Third—The ease and comparative freedom from pain with which the work is done.

DISCUSSION.

Dr. Beck—Referring to his early experience, spoke of the many accidents liable to occur in carving blocks, such as “gasing” the gums, that is, the gases given off from the fuel used in baking them passing into the muffle and acting upon the coloring matter of the enamel, changing its color to a dark blue or deep purple. When the blocks were made the difficulty was not over: riveting the blocks to the plate involved considerable risk. With the essayist, he thought the only proper way to construct an artificial denture was to make the teeth for the individual, carving and coloring them to suit each special case.

Dr. J. C. Green—Referred to Dr. Foster, of Trenton, N. J., the Wardell Brothers, Drs. Hall and Neal (father of the essayist), of Philadelphia, as men who had many years ago a reputation as skillful block carvers. No one at the present time can appreciate the difficulties dentists then labored under. Now, everything is prepared ready for use, and professional secrets are unknown; then, the dentist had to prepare everything himself, and to study out, unaided, as best he might, the many difficulties he encountered. He referred to Dr. Wildman’s patient investigations, looking to the preparation of a reliable gum color, to his success, and to his giving to the profession so freely the results of his labors. He well remembered the relief it was to him when the improved gum color was introduced. With Dr. Beck, he thought that to have teeth look natural they must be carved for the individual.

Dr. Magill—Thought that some teeth made in Europe had a more natural and bony appearance than many made here.

Dr. Templeton—Referred to errors in arranging teeth that he had frequently noticed, especially that of allowing the molars to curve in, making the arch in shape somewhat like a horseshoe. Some dentists seem to have but one mould, inserting in nearly every mouth small white teeth, without the slightest regard to individual requirements.

During the discussion the question was raised whether there had been a practical decline in the art of constructing artificial dentures. It was freely admitted that less labor, and perhaps less skill, was now expended, and on the other hand contended that the general use of the atmospheric principle in place of clasps and the more cumbersome springs, the improvements in pivoting, etc., indicated a decided advance, and that the dentures of the present were worn with more satisfaction and comfort than were the productions of the past.

A paper upon Dental Anomalies, presented by Dr. L. Campbell, of Slatington, was read.

The doctor accepted Magitot's definition of anomaly—a deviation from a specific type—and gave to Magitot the credit of having been the first to collect and to arrange for convenient study such facts as were then known relating to Dental Anomalies. He stated it as conceded that all defects of organism originate in embryonic peculiarities, and admitting this, we have little difficulty in recognizing the cause of many peculiarities of the dental system.

He urged the importance of carefully noting and studying the history of the many abnormal conditions met with in practice. In course of years these records may prove of great scientific value. He related a number of cases of persistent deciduous teeth, of delayed dentition, and of abnormal cases where teeth missing from the arch had erupted long after the usual time, and, in some cases, far from the place they usually occupy.

EVENING SESSION.

Dr. Louis Jack, of Philadelphia, read a paper entitled “Distinctions between the Indications of Hyperæsthesia, and those of Disturbances of the Blood Vessels of the Dental Pulp.”

He said there are manifested as a consequence of the irritation set up in the tissues of the pulp, brought about by the encroachment of caries, two distinct series of symptoms, one pertaining to the nerves of the structure, the other pertaining to the state of the circulation of the pulp. These are also respectively called the subjective and objective indications. To obtain a correct understanding of these conditions, some consideration of well-known anatomical peculiarities of the organ is necessary.

First, in regard to the arrangement and ultimate distribution of the nerves. It has been clearly shown that nerves enter the foramen by several distinct fibers which pass in an upright and parallel direction, giving off but few branches, and anastomosing but little until they reach the bulbous portion of the organ, where they form an exceedingly rich plexus, situated immediately beneath the odontoblastic layer. Thus far, observers, if we accept the unsupported claims of Boll, have not discovered nervous filaments beyond the peculiar boundary of loops formed by the ultimate terminations of the capillaries. We have to await further investigation to determine whether the ultimate distribution is only to the last limit of the blood-vessels, or whether they pass between the odontoblastic processes, the remains of which, after calcification is complete, constitute the dental fibrils. The fact that the surface of the pulp is not a highly sensitive organ to simple touch, not accompanied by pressure, may indicate that the latter distribution of the terminals is not correct, and that Boll's observations were incomplete. The absence of sensation, however, is not absolute proof of the absence of nerves. Many of the deeper structures are devoid of sensibility, until the activity of the nerves of sensation are awakened by increased blood supply. But it is a fact of great interest in connection with the treatment of the pulp, that the organ is not quickly responsive to chemical irritation.

The afferent vessels of the dental pulp enter with the nerves, and pursue a similar direct course, breaking up by branching during their passage, and at length form a capillary plexus over the surface of the organ. This capillary plexus has the remarkable characteristic that the ultimate capillaries do not anastomose with each other at the plane of their ultimate distribution, but that one side of the loop is afferent and the other efferent. This arrangement seems to be of the utmost significance, since the tendency of it is to limit the circulatory disturbance to the point of irritation, and is therefore restrictive of the diffusion of the excitement; it also tends to limit the nervous excitement of the organ, since exalted sensation and increased blood supply are correlative.

The situation of the pulp is such that it is subject to constant concussions, to thermal shocks, and, when decay commences, to chemical irritation sufficient, we would infer, to excite derangement of its functions; but so far is this from being the case that, in a

great majority of instances of encroachment of caries upon the pulp, the cause of pain is not so much the altered relation or the chemical irritation, as the direct application of force by which fluids are pressed against the delicate tissues of which the organ is composed. With this begins what the doctor terms the subjective stage of pulp irritation, indicated by a series of symptoms, varying in intensity and character in different individuals, the variations being no doubt due to constitutional differences and the varying intensity of the irritation excited. With some there may be repeated attacks of neuralgic pain in some of the branches of either division of the trigemini; in others it may find expression as pain in some other tooth, or a long continued frontal headache, lasting for weeks and occurring at stated periods, or the pain may shift from day to day to any portion of the trigeminal sphere. These symptoms all have a tendency to recurrence in the evening, and after they become established constantly tend to evening attacks. This last becomes the salient means of distinguishing between a case of dental irritation and an attack of facial neuralgia due to malarial poison, which occurs at regular periods, but less frequently at night. The above does not continue long without the occurrence of a marked symptom, which invariably attends the subjective stage when the principal element involved is the nervous tissue of the organ. This is the responsiveness of the tooth to cold. This impressibility to reduced temperature is peripheral, and appears to extend throughout the whole of the enamel. It is so persistent during the subjective stage, and varies so greatly in degree, that it may be accepted as an index of the degree of the hyperæsthesia, and it may be employed as a test of the progressive recovery, or, on the other hand, of the progressive advancement toward a more serious condition.

After the subjective indications have continued for a variable time, a new series of symptoms may set in, and for a time are associated with the first, which have so far been of a reflected character.

This new phase of pulp disturbance is denominated the objective stage, and its symptoms are manifested in the tooth itself. They usually occur, when they do not arise as the direct consequence of decided compression or mechanical injury, in a sequential order. First, there is some sensation of the tooth to contact, and it responds when struck with an instrument as it did not in the previous

stage. This is due to congestion of the peridental membrane. The reason for it is found in the fact that the peridental membrane, near the apex, derives a large portion of its circulation from the vessels as they approach the foramen; the nervous excitement induces a determination of blood which, being restricted from entering by the minuteness of the foramen, is partly distributed upon the membrane at the apex, and excites the sensibility of the nerves here, of which there is a free supply. Accompanying this condition is found an increased sensibility of the pulp, manifested at length by a heavy boring or a throbbing pain, caused by the increased determination of blood and the plethoric condition of the vessels of the pulp. This pain is continuous, but more severe at night. At last, as the congestive condition increases, the pulp is usually devitalized as a consequence of strangulation of the tissues at the point of entrance of the vessels. Coincident with these symptoms is another, which continues until approaching devitalization appears. This is the pain excited by heat, and it may be regarded as the second indication of the objective stage, if not concurrent with the first appearance of soreness of the investing membrane.

We have been considering a progressive case. There are many cases where, for some time, there is a kind of balance carried on between these two general conditions. For a time, the objective stage will be most marked, but may decline, when the subjective indications will again appear. Afterwards both may subside and the pulp apparently resume its normal condition. These alternations may repeatedly occur. The distinctiveness of these two series of symptoms are of importance in reference to the treatment to be employed. When the symptoms are subjective, and involve principally the nervous elements of the pulp, or can be kept within those bounds, conservation of the pulp may be attempted with reasonable grounds for success, but whenever the symptoms become objective, and involve the circulating elements of the pulp, the prognosis becomes uncertain, and increasingly speculative as the indications of this condition advance.

Dr. Darby—Had listened to the paper with a great deal of interest. It was practical and timely. We all meet with cases where we are sure there is pulp irritation, but find it difficult to define where and what it is. These cases are quite difficult to treat. We do not know how long it is well to let them go on, nor yet can we

always decide when it is best to cease external applications, and either remove the filling or drill into the pulp. He related a case in which he felt sure that devitalization would have had to be resorted to, and yet, under local treatment, the pain had unexpectedly ceased, and at present he had no doubt but that the pulp had returned to a normal condition. Dr. Jack's paper was suggestive; he hoped that by following out those observations we might be able to diagnose more clearly than we now can the exact condition of the pulp, so as to apply promptly the treatment best suited to its condition.

Dr. W. B. Miller—Exhibited, and, assisted by drawings, illustrated his method of applying the various forms of duplex and other matrices which he has invented. They are practical devices, and will no doubt prove quite useful. In the absence of the drawings it is impossible to give an intelligent idea of their construction, and the manner in which they are applied.

Dr. Sophie E. Feltwell, of Pittsburg, read a paper entitled "Abscess and Its Treatment." The essayist traced the usual course of alveolar abscess, describing its several varieties and noting those points where diagnostic care is needed to avoid mistaking alveolar abscess for allied conditions in the surrounding tissues. The treatment suggested did not differ materially from that usually adopted.

(TO BE CONTINUED.)

SOUTHERN DENTAL ASSOCIATION.

EIGHTEENTH ANNUAL MEETING, HELD AT NASHVILLE, TENN.,
JULY 27, 28, 29 AND 30, 1886.

REPORTED FOR THE INDEPENDENT PRACTITIONER BY "MRS. M. W. J."

The Southern Dental Association held its eighteenth annual session in the spacious Lecture Hall of Watkin's Institute, Nashville, Tenn.

OFFICERS.

President—W. C. Wardlaw, Augusta, Ga.

First Vice-President—B. H. Catching, Atlanta, Ga.

Second Vice-President—J. R. Knapp, New Orleans, La.

Third Vice-President—E. D. Hamner, Galveston, Tex.

Corresponding Secretary—E. S. Chisholm, Tuscaloosa, Ala.

Recording Secretary—R. A. Holliday, Atlanta, Ga.

Treasurer—H. A. Lowrance, Athens, Ga.

Executive Committee—W. H. Morgan, Nashville, Tenn.; G. F. S. Wright, Columbia, S. C.; W. H. Richards, Knoxville, Tenn.

FIRST DAY—FIRST SESSION.

The meeting was called to order by the President.

Dr. J. H. Prewitt, of Nashville, delivered an eloquent address of welcome, which was responded to by Dr. G. H. Winkler, of Augusta, Ga.

Dr. W. H. H. Thackston, the oldest living graduate in the profession, he having graduated in the second class from the Baltimore College, addressed the Association, delivering the message of the delegation from Virginia, a warm invitation to again visit the Old Dominion. He expressed his great gratification at meeting once more the friends of "auld lang syne," and also the young and rising representatives of the profession, and the corps of editors and journalists, to whom he accorded high meed of praise.

The President delivered his annual address, in which he took for his special topic the question: "Is dentistry a distinct profession, or should it be regarded as a specialty of medicine?" He took the ground that, whilst dentistry is a distinctly organized profession, made so by peculiar circumstances, it is properly and really a specialty of medicine, being at the same time a science as well as an art, and should be so recognized and encouraged. Though repudiated by the medical schools, it is as much a part of general surgery as ophthalmic, obstetric or laryngeal surgery. He discussed the subject thoroughly and logically, showing how impossible it was that one mind could ever properly cultivate the vast and ever-increasing domain of medicine, division of labor, whether mental or manual, also tending to proficiency of attainment. As we have the specialist of the eye, the ear, the thoracic cavity, the urinary organs, of nervous disorders, of skin diseases, of uterine affections, etc., why not the specialist of the mouth?

He spoke of the potent influence exerted by association gatherings in promoting the dignity of the profession, and of the natural fruits of these associations in laws regulating the practice of dentistry, in State Examining Boards, in the National Association of

Dental Examining Boards, and the National Association of Faculties of Dental Colleges, all of which exercise a reciprocal influence upon education, that foundation stone upon which the professional edifice must stand. The work should be pushed forward until a license granted in one State will be of binding force in all the States, and the diplomas of all the colleges received with respect and authority wherever presented. The culminating step should be the abolishing of all subordinate degrees, as D.D.S., D.M.D., L.D.S., etc., for a national degree, the equivalent in rank, reputation and dignity of the English degree, "Member of the Royal College of Surgeons." He set forth with pride the fact that we are even now leading the medical fraternity in the matters of State laws and professional education.

In the State of Georgia, at the very time when violations of the law against the illegal practice of dentistry were being successfully prosecuted, a committee of physicians was making futile efforts to prevent an oily-tongued, brass-mounted quack doctor from reaping a rich harvest from her deluded citizens. They were powerless to do more than grit their teeth and look on with smothered curses.

He suggested other matters for consideration and action, such as the appointment of dentists to the army and navy, and on the national board of health, our share in congressional appropriations for scientific research, the approaching medical congress, etc.

The address was listened to with the thoughtful attention it merited, and was followed by hearty applause.

The society then proceeded with the regular order of business.

The report of the Committee on Dental Education was called for.

Three papers were offered and read: One from Dr. B. H. Catching, one from Dr. W. D. Dunlap, and one from Dr. M. C. Marshall.

Dr. Catching considered the insufficiency of present modes of dental education; that while dentistry as an art had made wonderful progress, as a science it was advancing very slowly, and that separate dental schools were drawbacks to further advancement. We cannot expect to be recognized as medical specialists while we neither teach nor graduate as such.

It is commonly believed that to become a good dentist it is only necessary to have a mechanical turn of mind, and the only education necessary the training of such a bent. Separate schools have forced this conclusion. Before claiming recognition in medicine we must

accept the teachings which qualify for it. In the dental schools very little is taught of theoretical, and nothing of clinical medicine.

Humanity demands that we should thoroughly qualify ourselves to heal her ills and remedy her defects.

To command the highest respect and attain the fullest sphere of usefulness we must ——

Do away with Dental Colleges;

Do away with University Departments;

Do away with the separate degree of D.D.S.;

We must enter reputable medical colleges for the regular degree of medicine. Then we should go to a dental infirmary where practical dentistry is taught by the best talent. This would make us fully equipped to practice dentistry as a specialty of medicine. Medical colleges should have chairs of dental surgery, and teach dentistry as applied to medicine. This would be of benefit to physicians and a blessing to the people, and cause a higher appreciation of educated dentistry.

Dr. W. D. Dunlap, in his paper (which was read by Dr. B. H. Teague), reviewed the disadvantages under which earlier students in dentistry labored, and applied the advantages of office training under a competent preceptor in combination with a college course. When the preceptor is competent, and does his duty, the student is daily at work carrying out the ideas of his preceptor. His hand is trained, his eye follows the work done by his master, and a firm foundation is laid. When he enters college he knows his deficiencies and his necessities. He is prepared to appreciate the instruction he receives. After a course of stuffing for five months he goes back to the office, where he has time to digest it, finally returning to be crammed again. When he receives his diploma and opens his office he has leisure to more fully digest the enormous meal furnished by the college. He deprecated the idea of graduating a man on the strength of what he knows, regardless of time. As it requires at least two years to make a blacksmith, or a carpenter, or a shoemaker, less should not be given the dentist for that thorough training of body and mind required to fit him for his life-work. He spoke of associations as the school of schools—the school of the prophets—where the hoary-headed professor tells of what he knows, the successful man how he succeeds, the timid how he fails. Every one is at liberty to criticise, to build up or pull down, to discrimi-

nate between the true and the false. In this great school no certificate of merit is given, no diploma conferred, no seal, no stamp on the brow with the inscription "I made you." Here there is no stamping as graduate a man who has only attended commencement exercises.

Education implies honest, earnest, continued labor for a purpose, with no shams, no slippings over. The signature of the educator should mean more than, "I have examined and found competent." It should mean, "I have materially aided in preparing him for his life-work."

Dr. M. C. Marshall considered the question of dental education from still another point of view, namely, the advantages of associated effort. He spoke of the chaotic condition of dentistry less than a quarter of a century ago, when everything pertaining to it was kept as a secret, to be disposed of for a consideration. He reviewed the history of the earlier organizations for associated effort, and the great results that have been accomplished through these means, the elimination of much that was narrow, bigoted and untenable, to be replaced by the spirit of progressive, philanthropic enlightenment, widening our capacity, cementing fraternal feeling; of the building up of a professional literature, which is the exponent of our attainments. State dental laws are another result of associated effort. In local societies our best thoughts are prepared for presentation at the State meetings, and thence to the wider field of the general Association.

He also spoke of our dental colleges, regretting that, under the present system, professorships were valuable in proportion to the number of matriculates, leading sometimes to the offer of too great inducements to students, or the guarantee of graduation in a specified time, for a stipulated fee. Without a preliminary examination, like the Procrustean bedstead, all were made to fit—the diploma ready if the fee is forthcoming. The very large number of colleges now in operation, and for which there is no demand, creates these unjustifiable practices. When the chairs are not profitable they will be filled by men of the same calibre as those in our State Legislatures, where honesty and ability rarely immolate themselves on their country's altar. To secure representative men in our college faculties they must be well compensated, endowment being probably the only plan.

These questions should engage the attention of the Southern Dental Association, which should seek to formulate a system of college matriculation and graduation that shall elevate the standard of dental education, and date an epoch in our professional existence.

DISCUSSION.

Dr. J. J. R. Patrick—Said that the subject was like the harp of a thousand strings. He deprecated the continual discussion of the question whether or not dentistry is a specialty of medicine, and gave a comprehensive retrospective view of the history of medicine and what the degree of M. D. is supposed to represent, concluding that now, as in the days of the aborigines, the "medicine man" should be the wisest man of the tribe. He paid a noble tribute to the memory of John Hunter, the first to describe the foetal circulation, the first to describe the human jaw, the human teeth, the father of the science of physiology.

Dr. Wm. H. Morgan—The statistician of dentistry, corrected some errors in dates mentioned in the history of early dental organization, and dental literature, and dental schools. He reviewed the hardships and trials of the first dental students, giving interesting reminiscences. He spoke strongly in favor of the present system of dental college education, deprecating the views expressed in the papers read.

Dr. B. H. Catching—Upheld the views expressed in his paper, as the result of strong conviction and mature consideration. He considered that, as a profession, we cannot longer occupy our present position. We must either go backward or forward, professional pride demanding that it be forward, and into the domain of medicine. He considered that the dental student of the future should first graduate an M. D. and then enter a dental infirmary to acquire the practical details and the manipulative art.

Dr. O. Salomon—Thought that Dr. Catching had portrayed the ideal future of dentistry, but that it was impracticable at present. He considered that either dental schools must extend their course of medical study, or medical schools must enlarge their dental facilities. He would not cast reflections upon his Alma Mater, but urge the old colleges to adopt higher standards.

Dr. B. H. Teague—Strove to reconcile the opposing views of men who spoke from different standpoints, and discussed the sub-

ject from both points of view. He considered that the place to make the medical man was the medical college, but the place for the dental student was the dental college. He deplored the disrespect brought upon American dentistry abroad by the action of disreputable colleges in sending out incompetent men. He said that the present dental college system requires overhauling. Students must be better educated. There must be a higher standard of admission, and the preceptor also must be known to be properly qualified.

Dr. Mr Kellops—Spoke from the standpoint of a self-made man, congratulating the students of to-day, in most forcible language, on the grand opportunities they enjoy, but which they so carelessly neglect or recklessly throw away. He compared the days when everything connected with a dental office was held strictly secret, to be paid for, even if it were only how to make soft solder, with the cordial fraternal reception accorded professional brethren to-day. He himself put the latch-string out, and said to every man: "You are welcome to my office and to learn all you can in it." His patients never refused to allow one of his brother dentists to stand by his chair and study his operations. He spoke of the change taking place in the reception accorded to dentists by the medical profession, many being members of both professions, the favorites of one and the pride of the other. He spoke of the methods of Herbst, with whom he had just spent ten days in New York, and who says: "I have brought my baby to this country; I want to show it to you. If you don't like it, I'll drown it."

Dr. W. H. H. Thackston—Said that in the earlier efforts towards dental education, alliance was sought with medical colleges, but the overtures were rejected; that we had a right to be proud of the results of a separate, independent system of dental education, and that it should not be hastily abrogated and abandoned simply because some men under that system were not what they ought to be: that no system in the world could force ideas through thick skulls, or fill empty heads with brains; that there were quacks in all professions, and noodle-heads everywhere,—in medicine, in law, in the ministry. He considered that it would be making too great concessions of dignity and of self-respect to go back now to the medical schools which so long gave us the cold shoulder. There were very few men who were fit to be dental cadets, though

they might make respectable physicians or lawyers. When the millennium comes it will make very little difference whether we attend medical or dental schools, but until that time we should be very careful not to make any serious departures from established practices.

Dr. G. F. S. Wright—Spoke of the influence exerted by State associations in fostering dental education and enacting laws for the regulation of practice; but with all that could be done, men already in practice could not be interfered with, no matter what their defects. It is a principle in common law that the law cannot make a crime of what was not a crime before the law was enacted, but that the time was coming when every State would have a good and effective law, under which it would not be possible for a man to enter the profession unless he were really qualified.

Dr. Jas. Johnson—Spoke to the same point, that a law had been passed in Virginia which they hoped to make effectual. A great many are now in practice whom we cannot reach. We shall have to be patient till they die off, for we cannot touch them. He also thought, after looking the matter over carefully, that what we need is the establishment of universities with endowments. With well-endowed chairs we could get the best that the profession has. As things now are, we have not the means to pay for the best talent.

Dr. Crawford—Said that in a large per cent of the literature of dentistry, fundamental principles are viewed from a medical standpoint. In our periodical literature the best articles come from men who sign M. D., with perhaps the addition of D.D.S., but the M. D. takes precedence. The idea that the dentist must be a doctor has come to stay. The man who has had the training and education necessary to secure the degree of M. D. comes to the front.

Dr. D. R. Stubblefield—Spoke from the college standpoint. He said that if we could have dental students who were graduates from a literary college, or even from a high school, we would have a broad foundation on which to put the capstone. But this not being the case, we must do the best we can with the material that comes to us. He said that he himself was educated for the medical profession, but had left it for dentistry because God had given him mechanical instincts which find their proper outlet in dentistry.

That the school, whether medical or dental, made but little difference in the end.

Dr. Morgan—Said that previous speakers made a mistake in supposing the possession of certain attainments entitled a man to a degree. This was not so. A degree was conferred by certain institutions on certain conditions, and unless all those conditions were fulfilled there was no ground for claiming the degree. Not all the knowledge of an archangel could *entitle* a man to a degree until he had complied with the conditions of the institution conferring it.

Dr. McKellops—Asked whether a man was not entitled to a diploma if he presented himself for examination and passed it honorably?

Dr. Morgan—No, sir; not unless he complies with all the conditions with regard to fees, curriculum, etc. The percentage of thoroughly educated men in the two professions, in proportion to the number of men employed in each, is largely in favor of dentistry—ten to one, in fact. He considered the average office training a disadvantage and detrimental. He would rather take a young man from the plough than from the average dental office. He thought, also, that much that was taught in medical schools was of no practical use to the dentist, as, for instance, the treatment of yellow fever or cholera.

Dr. Wright—Asked about the conditions on which honorary degrees were conferred.

Dr. Morgan—Said that they were only bestowed upon men who had made valuable contributions to literature or science; only when well-merited, and where it was certain they could do no harm to the profession.

Dr. R. B. Adair—Thought the standard of literary acquirements now required by college faculties a proof of real advancement.

Dr. Morgan introduced Dr. G. W. Hubbard, the Dean of Meharry Medical College, an institution for the professional education of colored people, which will open, in October next, a dental department.

Dr. Hubbard spoke at some length in favor of the institution, showing what had been accomplished in the medical department, which has 62 medical graduates now in practice, the three years' course being very thorough and the standard of graduation high,

with very strict examination. The dental course will be of two terms, extended to three where found necessary, and he bespoke for their dental graduates the same welcome from the dental profession that the medical profession had granted to their medical graduates. He hoped they would also make it known among intelligent colored men. The work is extremely philanthropic, the terms being \$30.00 a session; \$75.00 or \$80.00 covering all expenses of the course, including materials, graduation fee, etc. There is also a literary department, where those who are not able to pass the preliminary examination will be entered for a year. The only requirement is a good moral character, soberness and uprightness, without regard to color.

On motion, the subject of Dental Education was passed.

(TO BE CONTINUED.)

THE HERBST CLINICS IN AMERICA.

REPORTED EXPRESSLY FOR THE INDEPENDENT PRACTITIONER.

Clinic given on Saturday, July 3d, at the office of Dr. Bödecker.

Dr. Herbst filled with gold cylinders, for Dr. Bödecker, a labial cavity in the right upper lateral incisor. It being exceedingly sensitive, an obtundent, original with Dr. Herbst, was applied. This is made in the following manner: A quantity of chemically pure sulphuric acid is put into a small test tube and saturated with cocaine. Then, while the mixture is stirred by means of a glass rod, sulphuric ether is poured in to the point of super-saturation; if any ether remains on the surface it will evaporate by itself, or it may be expelled by means of a chip-blower. A drop of this obtundent, upon a piece of cotton, was applied to the sensitive labial cavity with great success, the cavity being excavated without pain. After the preparation of the cavity, it was cleaned, disinfected as usual, and filled with Wolrab's gold, in four minutes and a half.

Dr. J. C. Sproul then took the operating chair, and Dr. Herbst filled for him the right upper second bicuspid, the cavity occupying the distal and grinding surface of the tooth. Previous to the excavation a matrix of German silver was prepared in the following manner: A piece of German silver, No. 32 American gauge, one-

quarter of an inch in width and one and one-half inches in length, was passed around the bicuspid to be filled. Then, by means of a blunt pair of cutting forceps, which in form somewhat resemble a pair of flat-nosed pliers, it was drawn around the tooth in such a way as to make it fit very closely. The German silver ring was then withdrawn from the tooth, a little soldering fluid (solution of chloride of zinc) was applied to the flanges and the ring soldered. One of the principal points to be remembered in the making of this matrix is to avoid allowing the tin solder to run to the side of the matrix next the cavity to be filled, as when the tin is touched by the rotating instrument some of it will be incorporated into the gold and the cohesion of the separate layers of gold impaired. Previous to soldering, the matrix must be made perfectly clean, and this is done by means of a piece of cotton wound around an engine bur dipped into moistened pumice stone, and this rubbed over the ring, inside as well as outside. After the cavity had been thoroughly excavated, the rubber dam and the matrix were applied and the filling introduced upon the cervical wall of the cavity. Dr. Herbst placed a very thin layer of tin, burnishing it up over the pulp, which was very nearly exposed, thereby modifying thermal changes. The tin was then followed by a layer of Wolrab's gold cylinders, No. 0, condensed in the usual way, first with the hand instrument and then with an agate point in the dental engine. When this was completed, a fine instrument made of a broken excavator was pressed all over the surface, first to discover all imperfectly condensed places, and secondly to roughen the polished surfaces of the gold, thereby obtaining better unity of the layers of the filling. The introduction of the gold occupied about eighteen minutes. The gentlemen present at this meeting were Drs. Taft, Bonwill, Abbott, McKellops, Rehwinkel, Tennison, Andrews, V. Pressler and Rhein.

In the afternoon another clinic was given, at which Dr. Herbst filled a lower molar handed to him by Dr. Dwinelle, which had been extracted over thirteen years, the cavity occupying the mesial and grinding surface of the tooth. Previous to excavating the cavity, a German silver matrix was applied, as mentioned before, but in addition to the matrix a brass wire was soldered all around it with soft solder, in order to stiffen it. After the cavity had been excavated, the tooth was imbedded, with the matrix in position, in a

large piece of shellac. The first layers of gold were condensed by means of a piece of cotton in the following manner: Cotton enough to fill the cavity was put over the gold, and then, by means of a large smooth engine burnisher, it was burnished into every corner where there was any gold; when the cotton was removed, it showed that the gold was thoroughly depressed into every portion of the cavity, and it was then further condensed by means of agate instruments in the dental engine. Dr. Herbst here remarked that the cotton, when applied in this manner, will make the most cohesive gold non-cohesive, but the moment rotating instruments have been used upon the surface it will again become as cohesive as before. The rest of the layers of gold were applied in the usual way, until the cavity was very nearly full, when one of the walls of the tooth gave way on account of the desiccated condition of the dry tooth, and the defect had to be repaired with gold, without removing the matrix, although the edges of the tooth could not be made perfectly smooth. When it was filled, the shellac and the matrix were removed, and the gold was found to be absolutely perfect in every respect. The filling was then finished with sandpaper disks, without burnishing the outer surface, so as to see whether the gold had reached all the rough edges of the broken wall. It was very critically examined by Drs. Taft, Dwinelle, Rehwinkel, Parr, Northrop and Bogue, all of whom agreed that the operation was absolutely perfect.

Dr. Herbst then filled a cavity in a steel matrix (the same one used by Dr. E. Parmley Brown for ascertaining the comparative weight of gold when condensed by the different methods of filling teeth), into which he introduced Wolrab's gold cylinders, No. 0, by means of hand instruments, assisted by his new agate points. This matrix was filled in about nineteen minutes, and the filling, when completed, weighed eighteen and one-sixteenth grains, or, one-sixteenth of a grain more than the filling introduced by Dr. Brown, with the electric mallet and an extra powerful battery, in forty minutes time.

Dr. Dwinelle, to satisfy himself as to the possibility of condensing gold by means of a piece of cotton, took an engraved stone, and after he had introduced a few large Wolrab cylinders, applied a piece of cotton over it and condensed the gold with it. When removed from the matrix, the gold was found to be a beautiful and exact counterpart of the engraved stone.

CLINIC GIVEN MONDAY, JULY 5TH, AT THE OFFICE OF DR. C. F. W.
BÖDECKER.

Dr. Herbst filled for Miss Tennison a very large cavity in the left lower first molar, occupying the mesial distal and grinding surface. The tooth had been devitalized, and its pulp canals filled by Dr. Tennison some time previous. Before the temporary filling was removed a German silver matrix was applied, which, as there was plenty of space between the first molar and second bicuspid, was strengthened by means of tin solder, when the cavity was prepared in the usual manner, the rubber dam applied and the matrix readjusted, the filling of this cavity occupying forty-five minutes. At the cervical wall of the distal surface was placed a thin layer of tin, which was followed by large Wolrab gold cylinders. The gentlemen who witnessed this operation were Drs. Atkinson, Bogue, Dwinelle, Tennison, Mills, Rhein, Rehwinkel, Taft, Meiggs, Sichel and V. Pressler, all of whom expressed great satisfaction at the result of the operation.

CLINIC GIVEN JULY 6TH AT THE NEW YORK COLLEGE OF DENTISTRY, CORNER OF 2D AVENUE AND 23D STREET, FROM
12.30 TILL 2.30 P. M.

Dr. Herbst first explained the general principles of filling by rotating instruments in the engine, as follows: All the gold introduced into the first layer of a cavity should be compressed in such a manner that it will not roll up on its sides, which may be prevented by using a large quantity of gold and a very large hand instrument, as large as the cavity will admit. If the cavity is shallow and very large, it is best to resort to the condensation by means of a piece of cotton, as before mentioned. After the first layer has been put into the cavity in this manner, it should be condensed with a fine instrument in the dental engine, made either of agate, blood-stone, garnet or steel. Steel instruments, however, when the engine is run at high speed, will become coated with a thin film of gold and thereby roughened, and while rotating will, by friction, heat the filling to such a degree as to make it uncomfortable, and at times even painful. In small cavities, such as incisor teeth, stone instruments will be found too large, and steel is the only material employed. If a steel instrument becomes coated with

gold, it should be rubbed upon a piece of No. 1 sandpaper frequently, when friction will be prevented.

Dr. Herbst then filled with gold, before the students of the college, a steel matrix made of four parts. When completed the adaptation was found to be absolutely perfect. He then exhibited to the students what may be called his museum. Eighteen gentlemen were in attendance.

CLINIC GIVEN AT THE DEPOT OF S. S. WHITE DENTAL MANUFACTURING COMPANY, CORNER OF 9TH STREET AND BROADWAY,
JULY 6TH, AT 3 P. M., UNDER THE AUSPICES OF
THE FIRST DISTRICT DENTAL SOCIETY OF
THE STATE OF NEW YORK.

Dr. Herbst filled for Dr. Bödecker a left upper central incisor. The cavity was found to be very shallow, occupying the labial portion of the tooth. As it was exceedingly sensitive, Dr. Herbst's obtundent was applied, and the tooth was excavated with but very slight pain to the patient. After the rubber dam had been applied a clamp was used to hold the rubber above the cavity in the cervical portion of the tooth, which was original with the operator. It was made from a curtain ring, to one side of which was soldered a foot-like process, while a flange was soldered to the other. Before applying this clamp, Dr. Herbst inserted two pieces of German silver, one between the cutting edges of the two central incisors, extending downward about a quarter of an inch, which was twisted half way around. The other was inserted between the eye-tooth and lateral in the same manner, when some impression material, which ought to be of the hard grade, was softened and pressed over the lingual and cutting edges of the tooth. When hard, the clamp was heated and pressed into position above the cervical margin of the cavity in the central incisor tooth, carrying the rubber dam before it. The clamp being put into position, the cavity was filled in about twenty-three minutes. After the tooth had been filled, his appliances and specimens of filled teeth were exhibited. This display comprised of five trays. In the first were seen all possible cases of cavities illustrated; some of these preparations had been previously exhibited at the clinics and meeting of the First District Dental Society by Dr. Bödecker, and some of them have already been described in the *INDEPENDENT PRACTI-*

TIONER. The cavities thus illustrated by preparations were grinding surfaces in molars and bicuspid, cavities in the distal, mesial and grinding surface of a bicuspid, illustrating the application of a steel spring matrix combined with shellac, in the following manner:

There was a large space between a bicuspid and molar tooth, which was filled up by shellac pressing against the steel spring matrix, placed between the distal cavity in the second bicuspid and the mesial surface of the second molar tooth. Another cavity in the distal portion of the first bicuspid was also filled up by shellac pressing against another steel spring matrix. Thus the second bicuspid tooth was almost encircled by two pieces of steel spring held very firmly in position by shellac. The mesial part of this matrix, however, did not quite reach the grinding surface of the tooth, as it would obstruct the entrance of the gold in the mesial cavity. On the distal surface the matrix projected a little above the grinding surface of the tooth. This form of matrix should only be employed when the German silver matrix is not applicable.

In another instance three teeth were exhibited with cavities like those already described, but in this case German silver matrices had been applied around the tooth, strengthened with brass wire and tin solder. One of the preparations comprised two upper central incisors, both with cavities involving the mesial and a little of the lingual surfaces, with a matrix prepared of shellac and steel in the following manner: The shellac had been softened over the flame of an alcohol lamp, pressed against the lingual surface and a little over the cutting edges of the two front teeth, when it was removed, and a small piece of steel watch spring inserted between the places of the two cavities in the centrals; the steel spring in this instance did not quite reach the labial border of the cavity, as it would have obstructed the entrance of these cavities. In the next preparation were observed the two above described fillings completed. Another preparation showed the matrix as applied for a contour operation of an upper canine and lateral tooth. The shellac matrix, which must be made previous to excavating the cavity, had been prepared in the method described above, but in addition to this a steel spring was adjusted at the mesial surface of the eye-tooth, and another piece of steel spring was adjusted over the cutting edge, thus representing an entirely closed cavity with four parts into which the gold could be easily packed. The next prep-

aration showed the completion of this operation as described before. There were ten other preparations, showing materially the same principles in different localities of teeth. Another preparation showed the application of a steel spring for the use of approximate cavities between incisors and bicuspid teeth. Dr. Herbst distributed a number of these steel springs at every clinic, to every gentleman present, and described their use in the following way: A steel spring about six to ten inches long, with a little piece of wire soldered across the end so as to prevent it from slipping from between the teeth, is inserted next the approximate cavity. This steel spring will serve either as a matrix or as a protection for the proximate surface of the adjoining tooth during excavation. As a protection for the adjoining tooth it is an exceedingly valuable adjunct in cases where there is a filling, or when it contains a cavity which is to be excavated. Even if the tooth be not decayed, it will prevent the marring of it by the bur during this process, though the bur will suffer somewhat. This piece of steel spring is put between the teeth, and bent over the tooth which is to be shielded during the process of excavation or filling. If the necks of the teeth, especially those of lower bicuspids, are very small, the steel spring has a tendency to slip down upon the gum and produce pain, besides being a disadvantage, as it is not perfectly steady in that position. When this is the case, one of the ends of the steel spring is inserted into a small piece of previously softened shellac placed between the teeth, and drawn forward, at the same time pressing the shellac somewhat over the grinding surfaces of the teeth. When cold this will slip into its place and prevent any possible movement of the steel spring matrix, either up or down. In every case where shellac is made use of, the operator ought to be very careful not to let particles of it adhere to the walls of the matrix, as the rotating instruments will incorporate this into the gold and prevent the second layer from cohering to the first. If the gold is packed against the shellac matrix, it ought to cover the entire surface of the shellac in the first layer, thus preventing the rotating instruments from touching the shellac.

In another tray were observed four molars which had been filled by fitting a piece of 24 carat gold, gauge No. 32, to the cavity to be filled. Upon the lower surface of this was soldered a small ring, cut from a former spiral gold spring. After the cavity had been

filled with oxy-phosphate, the gold cap was pressed into it and thoroughly burnished against the edges of the cavity, thus sealing the opening of the cavity by means of a gold cap.

In another preparation was exhibited a matrix made out of a piece of steel, about one and a half inches in length, bent together. This was inserted between the two bicuspidis; into the open end, and near the gum, was pushed a small piece of wood, to fasten it and thoroughly hold it against the two cavities in the proximate surfaces of these teeth. There were several of these cavities illustrated in the same manner, which do not require further mention. In some preparations exhibited upon this tray, were teeth that had been filled with Herbst's amalgam, which contains ten per cent. of gold. These teeth, after they had been filled, were split. They showed very minutely the beautiful adaptation of this amalgam to the walls of the cavities. There were also three forms made out of steel springs, one of them about an inch square and a sixteenth of an inch high. These forms had been filled with Herbst's amalgam for the purpose of showing that, during the process of setting, it did not shrink a particle from the walls.

In some instances, when it is desired to fill with amalgam front teeth with thin walls, the usual discoloration is obviated by lining the cavity with a thin layer of gold, as follows: Two or three of the largest gold cylinders are closely compressed between the fingers, and, when perfectly flat, are dipped into a very thin solution of gum copal and sulphuric ether (two grains of copal to half an ounce of ether). When nearly dry the gold is held before the cavity by a pair of tweezers, and by means of a piece of cotton and a rotating instrument in the engine it is put in position and burnished closely against the wall of the cavity. Care must be exercised that the cotton does not wind around the rotating instrument, else it may tear the gold out again. The object of applying a thin layer of copal varnish upon the gold is to protect it from the action of mercury. Teeth thus lined and filled with amalgam do not discolor, as the gold is protected from the action of the mercury by the application of the thin copal varnish. There were many preparations which had been made in this manner, in some of which the gold was visible through the enamel. Some of these teeth had been filled a year ago, yet the tooth had preserved its natural color. All of these preparations were kept moist by water. Another prepara-

tion, a central incisor, exhibited a filling upon its labial surface nearly three-quarters of an inch in length, and the whole width of the tooth. By the side of this filling there was a tooth formed out of ivory, which was perfectly flat and polished upon its surface, exhibiting a very small groove around the edge. Dr. Herbst declared that the cavity in the previously described tooth had been prepared in the same manner as this one, the first layer of gold having been packed with cotton, as before alluded to. The filling was exceedingly hard and perfect about the edges.

In this tray, beside a great quantity of other fillings, there was some rubber work which had been lined upon its lingual surface with gold. The lining had been accomplished by taking an ordinary piece of red rubber dissolved in chloroform, and applying this to a sheet of ordinary gold foil. After the flask had been packed with the rubber, a piece of very thin rubber dam was washed, and while wet was laid over the rubber, and the two parts of the flask brought together and very nearly closed. The flask was then carefully separated again, the piece of rubber dam removed, and the gold foil, with its prepared side toward the rubber, placed over the lingual surface of the plaster model, when the flask was again closed and vulcanized in the usual way. Dr. Herbst claims that when the rubber during the process of vulcanization does not come in contact with the plaster, the contours of the model are better preserved, and the piece presents a better appearance when finished.

In tray No. 3, mainly polished materials were exhibited, and these have been described in the *INDEPENDENT PRACTITIONER*. Some of them have, however, since been improved. Instead of using steel mandrels for holding the rubber and corundum points, Dr. Herbst makes use of German silver, which combines better with the rubber and corundum when vulcanized. They are made in the following manner: One part of ordinary rubber and two parts of corundum or emery are taken. The latter is moistened with chloroform and kneaded into the rubber upon a warm marble slab. When all the corundum has been incorporated into the rubber, it is rolled up into strings of the thickness required, placed in a pill machine and divided into pieces about the size of an ordinary pea. These pieces of rubber are then placed upon a mandrel of German silver which has been previously flattened on its point. A little heat is applied to the mandrel, and it is then inserted into

the rubber and corundum. To center the piece of rubber upon the mandrel, Dr. Herbst employs an ingot or bullet mould in the form of a pair of pliers. When they have been centered in this manner, they are flaked and vulcanized in the ordinary way. In this tray were also exhibited some new forms of agate and garnet burnishers, all having been made by Dr. Herbst. The agate points were so set that only a little of the agate protruded from the steel setting, thus very much lessening the danger of breakage. The garnets were made of ordinary garnet beads, by cementing an ordinary broken bur into the hole in the bead by means of common sulphur. When a bead has thus been fastened upon a mandrel, it is ground upon a fine corundum stone, and is then ready for use. The garnet, as well as the agate points, should never be polished, as they will give a polished surface to the gold upon which they are used, and prevent another layer from cohering readily.

Tray No. 4 contained a number of inventions. There was an upper jaw demonstrating the method of holding a replanted tooth in position. This is done in the following manner: Take a piece of rubber dam about one inch in length and about half an inch wide, and depress its center by means of a heated instrument with a round head. Two, three or four holes, according to the number of teeth over which the rubber is to be carried, are made in the rubber when it is applied. The depression in the rubber goes over the crown of the tooth to be replanted. Ligatures are passed around the tooth to hold the piece of rubber in proper position, which ought to remain in place from three to four days, when it will be found that the tooth is sufficiently firm to remain in place. One of the principal advantages of this method of replanting is that the tooth will be pressed into the alveolus a little deeper than its neighbors, thus avoiding the danger from undue pressure of the opposite tooth.

Tooth brushes for the dental engine, to be used in cleaning teeth, are made as follows: Take three small bottle-cleaning brushes, which are about two inches in length, twist the wire firmly and divide them into the required length. Shellac one end of each piece into a plain porte polishing mandrel, while at the other the wires are soldered together with tin solder.

As Dr. Herbst is not near a dental depot, and has not always a porte polisher handy, when he wants one he makes it out of a pencil holder by sawing the point off and soldering it upon a common

German silver mandrel. He cements a piece of sponge into the rest of the pencil holder, and uses it for keeping corundum points moist when grinding and polishing gold fillings.

Diamond discs and diamond saws are easily made by powdering some diamond chips in a steel mortar made for that purpose, then mixing the diamond dust with oil and hammering it into a piece of German silver, which may be used either as a saw or wheel. Diamond drills can be very easily made by taking a German silver mandrel and sawing a slot about one-eighth of an inch in length into the end. A small flat piece of diamond is then pushed into the slot, the ends are bent together and it is soldered with tin solder. The diamond drill may then be formed by rubbing it while revolving in the engine upon a piece of sandpaper. This will remove only the German silver, and the diamond will come to the surface; but this drill does not cut dentine or enamel as well as steel instruments. It is intended more for the use of glass and porcelain.

For making a very small metal plate, without preparing zinc casts, Dr. Herbst takes two impressions of the same mouth, and pours one of them with plaster and the other with plaster and pumice stone. He burnishes a piece of platinum foil over the plaster model, and over this foil he burnishes a piece of platinum gauze as large as he desires his plate to be. Removing this plate to the model made of pumice stone and plaster, and pinning it down with platinum pins, the foil and gauze is heated, and eighteen carat gold is flowed over it. Thus a very strong and serviceable gold plate may be made in a very few minutes. Pivot teeth may be prepared in the same way.

Plain teeth may be readily made into gum teeth by melting upon the end a little powdered ruby glass. This glass must be very finely powdered under water in an agate mortar, and when fine enough it is applied by means of a camel's hair brush to the cervical portion of the plain tooth, and put into a steel thimble, which is then placed upon charcoal and the glass flowed by means of the ordinary gas flame and a blow pipe. In the same manner a piece of glass may be inserted into a cavity, as has been done with pieces of porcelain in this country, in the following manner:

An impression of the defective cavity in the tooth is taken with wax, into which plaster is poured. This, when dry, is removed and represents the exact cavity of the defective tooth. Very finely

powdered white and brown glass is placed into this plaster model. The proportions of the glass are four or five of the ordinary white arsenious acid glass to one of dark brown. Both of these are powdered separately in water in an agate mortar, and then mixed according to the shade required. Some of this powder when moist is introduced into the cavity in the plaster model of the tooth, and placed in the iron thimble and burned. When cold, a little more is added; it is burned again, and if the color is right it may be completed in the third bake, and the piece of glass may be cemented into the cavity by means of oxy-phosphate. If the joint of the glass with the tooth is objectionable, this may be hidden by drilling a little more of the tooth away, obtaining sufficient undercut and filling the cavity with gold in the usual manner.

Dr. Herbst makes all of his nerve broaches of 14 carat gold wire. He points the ends of a wire and fastens it in a piece of impression material by heating. When cold, he cuts the barbs by means of a very sharp chisel, when they are removed and are ready for use.

If an engine bur or drill breaks and is yet long enough for service, he grinds a triangular point upon it and uses it for drilling out fissures, and finds them exceedingly useful and serviceable.

For filling cervical cavities in front teeth he does not make use of the ordinary Evans clamp, but makes one of a steel pen or a curtain ring. A steel pen is broken, annealed and somewhat flattened out. A hole is cut near its end, which is bent over toward the hollow of the steel pen. This bent piece will hold the rubber above the cavity, while the other end of the pen is fastened into a piece of impression material placed over three or five teeth. To secure this impression material in its place, two pieces of metal are pushed between the cutting edges of the teeth and turned around. This will thus prevent the moving of the impression material. The curtain ring may be used for the same purpose by soldering a little leg on one side and a flange of metal on the other. This little leg should be soldered in such a manner that when the ring lies flat the leg is standing up, while the flange lies parallel with the ring. This clamp, when applied, must be heated and the flange pressed into the impression material.

For regulating teeth when a plate is employed, it will be found that sometimes the patient will not keep the plate in the mouth. Dr. Herbst lets the rubber plate extend over the buccal surfaces of

the molar teeth, and inserts two, three or four screws near the cervical edge, between the teeth, through the rubber plate. In this manner the plate is held in position very securely, and the wedging may be done in half the usual time by means of cotton.

For repairing rubber plates quickly, Dr. Herbst drills two holes about the thickness of the ordinary mandrel into the rubber plate, in a direction to correspond to a dove-tail. These drill holes he then fills with a round piece of celluloid, letting it extend somewhat upon the labial surface of the teeth. Then the tooth is warmed, held over an alcohol lamp, and as soon as the celluloid softens upon the outer surface of the tooth, it is pressed into position and held there until it is cold. A tooth replaced in this manner will serve almost as well as though it was repaired by vulcanizing, and it can be set in a few minutes.

There was also a box of preparations sent to this country by Dr. Franz Berggren, of Stockholm, a pupil of Dr. Herbst, containing some beautiful fillings which were made out of the mouth, all by the Herbst method. Preparation No. 1 represents a root of an upper first molar tooth, which had been built up. This filling weighed six and a quarter grams. The gold used was Wolrab's cylinders, No. 1, inserted by means of hand instruments and steel engine instruments. The filling had been made in a German silver matrix, fitting closely around the tooth. The gold had not been annealed, except the last layer upon the grinding surface. The filling and tooth were sawed in two for the purpose of showing the adaptation and solidity of the filling.

No. 2 represented a lower first molar with a large contour filling made in a German silver matrix, and the gold introduced by means of hand instruments and agate engine instruments. The gold used was Wolrab's No. 0 cylinders, which were only annealed in the last layers. The filling appeared to be exceedingly hard, and represented a beautifully smooth polished surface.

No 3 represented a lower second molar with a large contour filling made of Wolrab's gold cylinders No. 0, and weighing six and a half grams. This filling was inserted in a German silver matrix by means of hand and agate engine instruments. This, as well as the foregoing, presented a beautiful appearance, the surface of the filling being hard and nicely polished, without any visible indentations.

No. 4 represented an upper bicuspid with a filled cavity, involv-

ing the distal and a portion of the grinding surface of the tooth. The filling had been made in a nickel matrix, and condensed with hand and blood-stone engine instruments. The gold used was No. 1 Wolrab's cylinders, without annealing. This filling showed a beautifully polished surface, upon which, even by the application of a magnifier, no indentations were visible.

No. 5 represented a bicuspid tooth filled with Wolrab's gold cylinders Nos. 1 and 2, inserted in a German silver matrix by means of hand and steel engine instruments. All the gold had been annealed previous to its introduction. The cavity involved a portion of the buccal cusp, as well as mesial and distal portions of the tooth. The filling appeared exceedingly dense, with fine smooth edges.

Preparation No. 6 represented a gold filling made of Wolrab's gold cylinders No. 2, taken out of the tooth and hammered flat, and afterwards, by means of a pair of metal shears, cut into small strips, to prove that gold can be united into a solid mass by the Herbst method, without annealing.

Preparation No. 7 represented a piece of gold sawed off from a large filling made by the Herbst method with Wolrab's gold cylinders. The surface exhibited a homogeneous hard surface, it being untouched by the burnisher or any polishing material.

Preparation No. 8 represented a filling made in the distal cavity of a bicuspid tooth, which had afterwards been cut into thirty-two pieces by means of a pair of metal shears. The filling was made of Wolrab gold, introduced by the Herbst method.

No. 9 represented a very large contour filling, made in a lower molar, and afterwards sawed into three pieces. The grinding surface of the filling had been sawed off first, and the rest of the filling was divided longitudinally; the grinding surface of this filling had been left intact, but the other two portions had been hammered out into pieces measuring three-quarters of an inch in diameter. This was to show that the several layers of the gold, introduced by the Herbst method of filling, were intimately connected with one another. The filling when removed from the tooth represented a weight of eleven grams, and it was made of Wolrab's No. 0 cylinders, without annealing.

Preparation No. 10 represented a mass of gold weighing four grams, condensed by the Herbst method, in a nickle matrix. After

the removal of the matrix the gold had been annealed and hammered out on one side, without any apparent check or break in the mass.

Preparation No. 11 represented a large head, measuring about three-quarters of an inch in diameter, which had been condensed into an engraved stone matrix. The gold was made in one layer of 50 cylinders of Wolrab's No. 0, and had been condensed by means of an agate point in the dental engine. The contour of this head was very sharp, and nearly perfect on all its edges.

There was also a preparation which had been made by Dr. L. Foerberg, of Stockholm, which represented the largest contour filling of the whole cabinet. It involved the entire labial and both mesial and distal surfaces, as well as a portion of the cutting edge of an upper central incisor. The filling extended about an eighth of an inch above the edge of the enamel, and the only enamel visible was that on the lingual portion. The surface of this gold, which was condensed by the Herbst rotary motion, was exceedingly hard and dense, and presented a beautifully polished surface.

Editorial.

THE TWENTY-SIXTH ANNUAL MEETING OF THE AMERICAN DENTAL ASSOCIATION.

The Niagara meeting can scarcely be called a very brilliant success. There was a fair attendance and some good papers were read, but the general interest was not what it should have been. Some of the sections were practically without a report, while in others, instead of an advance in thought and progress in science, there was the same dreary round of stale subjects, the same old familiar common-places from the old familiar sources, that have marked the meetings from time out of mind. To be sure, many of the old things were said in a very impressive way, and some of the old speeches were revamped and newly turned for the occasion, but there certainly was a most unaccountable lack of originality and token of primitive research for a meeting of the best men in dentistry. We have become habituated to the boast that dentistry is the most progressive of all the sciences, and that our rate of progress is astounding. We have just passed another anniversary, and what has been done to make good this vaunt?

During the past year the various dental journals have published to the world some meritorious papers—essays that indicated a depth of research, a breadth of investigation that is creditable to us as a profession. But with two or three exceptions, what evidence of study was presented at Niagara? There should have been a plethora of original papers, so that it would have been impossible to read them all, except by title. In reality, there was a dearth of essays, and one almost sighed for another chapter of Stephen Pearl Andrews “*Alwato*” to break the monotony.

Sections I, II, III and IV presented little that was worthy of their subjects. Sections V, VI and VII did better, but even they did not rise to the full dignity of the occasion. There was less of windy rhetoric in the discussions than has sometimes been heard, but they were in the main spiritless. When meetings of the Sections were called it was with the extremest difficulty that some of them could get a quorum for the transaction of the necessary business. Members would not attend, and when they did had little to say. Meetings of important Sections were held with but three or four present, and the matter that was to be presented before the society was seldom properly digested. The officers of a Section cannot do the work of it alone, and unless they are properly sustained by the members we shall continue to see the same inertia manifested. When the secretary called the roll of members that they might choose the Section in which they would work during the coming year, there were but a few feeble responses, and many of those present were seen to slide toward the door.

One thing that interfered with the scientific success of the meeting was the miserable political maneuvering, the wire-pulling, and the factional spirit which was early manifested. Even on Monday, the day before the commencement of the session, the politicians were on hand and had begun their dirty work. There was a constant button-holing of members in every nook and corner, and all the resources of ward bummers were called in play to carry desired political ends. There were members who took no part in the discussions, or interest in the meeting aside from the trials of party strength which were afforded by the occasional votes. The attention of members was constantly distracted from the business in hand by the cabals of these politicians. Is it not strange that men will travel long distances and be at heavy expense to attend a meet-

ing in which they have no interest aside from their desire to manipulate the political wires? To such a limitless extent was this contemptible business carried at Niagara, that many reputable members left before the close of the meeting, completely disgusted at the exhibition.

Nor was this confined to any one class or party. "Pipe-laying" was begun months ago, and men were solicited to support this or that one for office when the time came. In the name of all that is honorable, must this thing continue? Meeting ostensibly for scientific purposes, must the whole proceedings be prostituted to the ambitions of any man, or class of men? Do members go to these gatherings for no other purpose than to elect this or that man to an office? We protest against this debasement of an honorable society to dishonorable ends. Unless it be stopped the meetings of the American Dental Association will be unworthy the attendance of those who love their profession. It is to be hoped that this year has witnessed the last of this dishonorable business, and that we shall not again see such an exhibition as was made at Niagara.

We have spoken strongly on this subject because we have felt deeply, and deem it the duty of the professional journals to enter a protest that shall be heeded.

The financial exhibit was a remarkable one. But we believe we are not alone in the opinion that no organization like this has any right to thousands of dollars in its treasury. It is not supposed to be a money-making institution, and while the treasury should be in a healthy condition, surplus funds should be expended in the fostering of scientific study. The society did well in voting liberal sums this year to such of the Sections as are engaged in original investigation.

What can be done to make the society better? To our mind, unless the Section work be better done and a greater interest be manifested in them by the members, they should be abandoned, and a return made to the old committee method of work, which was successful for so many years.

The society should publish its own transactions, and not rest under obligations to any one man or firm. This is a delicate subject for us to approach, but we believe that we are entirely conscientious in our views. There is no questioning the manner in which the work has been done. The volumes of transactions published by

the S. S. White Dental Manufacturing Co. are models of beauty and excellence, and that firm has had no selfish motive in doing it. They have had little to gain, while the expense has been considerable. But it is not a dignified position for a National Association to assume, when it places its records in the hands of any private firm whatever, and there is no disputing the fact that papers are withheld which, under a different method of publishing, would be presented to the society. If the present course is to be pursued, no one will question the fitness of giving the work to the present publishers. But it is a matter which, to our mind, should be done by the society itself.

There is another view of this method, which is that it should be the policy of the society rather to discourage than to countenance the exhibition of dental manufacturers and dealers at the meetings. A dental depot in the same building with the meeting constantly tends to distract attention from the papers and discussions. It is impossible to keep dentists out of the stock room, no matter how faithfully the proprietor may strive to do so. Members will gather in knots to discuss this or that appliance and to purchase goods, and their attention and interest is thus centered at the wrong place. We appeal to all those who have been in any way responsible for the conduct of the meetings, to say if the greatest difficulty they have encountered has not been to draw members from the depots to the hall when the time has come for opening the sessions. During the late meeting the President was not once able to open a session within twenty minutes of the hour, because of the impossibility to obtain a quorum. We hope that at the next meeting there will be no exhibition of dental goods allowed within the precincts of the building devoted to the sessions, and that to this end a hall will be engaged that has no rooms adjoining which can be used for such purposes. We do not mean to speak in detraction of the dental displays. On the contrary, it is because they are of such interest to the dentist that we think they should be kept at a distance. The American Dental Association does not meet for the purpose of affording members and others an opportunity to purchase stock.

There are other things concerning which we desire to speak, but the lack of space forbids, for the present. We do not wish to appear in the role of a universal fault-finder, but some one should give voice to a feeling that is widespread, and therefore we have spoken.

SCIENTIFIC INTOLERANCE.

How can there be such a question as Science versus Religion ? Both are supposed to be expressions of great truths, and though we may not at first sight recognize the harmony of separate presentations, yet if they be not falsities, each is compatible the one with the other. But if any man attempts an appeal to bigotry and prejudice when a new scientific theory is broached, and endeavors to forestall a candid examination by denouncing it as not in harmony with any formulated creed, whether of revealed religion or practical knowledge, he is reviving the methods of the old inquisition, which gave to Galileo the choice between recantation and the stake. Creeds are but the work of men, and in the light of further knowledge even the best may be found defective.

Dr. C. N. Pierce, in the July number of *The Cosmos*, administers a righteous rebuke to the captious cavilers who endeavored to wrest from its obvious sense the meaning of his paper read before the New York Odontological Society last November, and to carry it into the domain of theology. It is always easier to create a prejudice against an argument by branding it as heterodox, than carefully to examine into its merits or demerits. But in the name of all that is consistent, why should political or religious questions enter into the consideration of strictly scientific subjects ? If the theories be true they cannot but harmonize with religious truth, and if they be false that must appear upon an examination. The aim of professional societies is supposed to be the elimination of extraneous matter, and the bringing to light of scientific facts, no matter what particular creed or pathy or faction may fancy itself prejudiced thereby. What matters it what political party or religious sect a man may belong to if he reveals to us new teachings of science ? Is there not even one place where men of all creeds can meet on common ground, and intelligently discuss scientific and professional questions without engaging in personal, political, or religious polemics ? This branding of men as dangerous creatures because they do not subscribe to some other man's dogma, is unworthy those who are searching after truth. What man possesses a creed which all other classes of men will pronounce orthodox ? It is every man's privilege to stand up stoutly for his political or religious belief when it is attacked, but it is despicable to appeal to sectarian or party prejudice to prevent the consideration of scientific theories in a professional meeting.

ANOTHER APOLOGY.

Our excuses to contributors are becoming somewhat monotonous. But they are a necessity, for it is positively impossible to print in each number all the acceptable matter that is offered. Articles from some of the best writers in the profession are waiting their turn, and sometimes the authors think they are obliged to wait altogether too long. Yet this number consists of *seventy-six pages*. Some of the publishers have put their hands deeply into their own pockets that additional space may be given for matter that they deem of importance to the profession. How many would do the like, when they had no personal object to serve? The printing of the report of the Herbst clinics, for instance, is directly paid for by those whose only object is to give to the profession information that shall be of service to every dentist. All honor to the men who stand ready to prove their devotion to dentistry by the most unselfish of labors, and by an unstinted liberality.

MEDICAL SPECIALTIES.

Dr. Wardlaw, the President of the Southern Dental Association, in his annual address, very ably discussed the relation of dentistry to medicine, and came to the conclusion that the former is necessarily a specialty of the latter.

There is a view of this question which dentists seldom consider. How can a man regularly practice a specialty in medicine if he is not himself a medical man? Ophthalmologists, dermatologists, etc., are medical men, holding a regular medical degree. If they do not possess this, the distinctive diploma of medicine, they certainly are not and cannot be recognized as practicing anything *in medicine*, whether a specialty or otherwise.

ATTENTION.

With this number will be sent bills to those who are indebted for subscription. A few are in arrears for more than one year, though it is the aim of the publishers to cut off all who do not pay promptly. We respectfully but urgently ask an immediate response to these reminders. We have tried to serve our subscribers well, and now hope they will show their appreciation by helping to meet the necessary bills of the journal. Please send postal notes, postal orders, or drafts on New York. It costs too much to collect personal checks for such small amounts. Send all remittances to the Editor at Buffalo, N. Y.

Current News and Opinion.

UNIVERSITIES OF EUROPE.

Of German Universities located outside of the German Empire, that of Prague (founded 1348), is the oldest, and that of Vienna (1365), follows next. Of those founded in Germany in the 14th century these still exist:

Heidelberg, founded.....1386.

15th Century.

Leipzig, founded.....1409. Freiburg, founded.....1457.

Rostock, founded.....1419. Tubingen, founded.....1477.

Greifswald, founded.....1456.

16th Century.

Marbourg, founded.....1527. Olmutz, founded.....1581.

Konigsburg, founded.....1544. Wurzburg, founded.....1582.

Jena, founded.....1558. Graz, founded.....1586.

17th Century.

Giessen, founded.....1607. Innsbruck, founded.....1672.

Kiel, founded.....1665. Halle, founded.....1694.

18th Century.

Breslau, founded.....1702. Erlangen, founded.....1743.

Gottingen, founded.....1737.

19th Century.

Berlin, founded.....1809. Munchen, founded.....1826.

Bonn, founded.....1818.

The following named have been discontinued : Cologne (founded 1388), Erfurt (1392), Mainz (1477), Dillingen (1549), Helmstadt (1576), Altorf (1578), Paderborn (1615), Rinteln (1621), Osnabruck (1630), Linz (1636), Bamberg (1648), Herborn (1654), and Duisburg (1655). The University founded at Ingolstadt in 1472 was in 1802 removed to Landshut, and in 1826 to Munchen; that founded at Wittenberg in 1582 was removed to Halle in 1817, and that founded at Frankfurt in 1506, was removed to Breslau in 1811.

The number of students in attendance at the 20 Universities of Germany during the last scholastic year was 28,021, distributed as follows :

Berlin.....4,434. Heidelberg.....1,036.

Leipzig.....3,060. Greifswald.....1,016.

Munchen.....3,035. Marbourg.....939.

Halle.....1,518. Erlangen.....909.

Breslau.....1,425. Konigsberg.....871.

Tubingen.....1,403. Strassburg.....846.

Wurzburg.....1,369. Jena.....655.

Freiburg.....1,319. Kiel.....542.

Bonn.....1,293. Giessen.....513.

Gottingen.....1,076. Rostock.....313.

Compared with the year 1880, the increase (33.4 %) of students amounts to 7,033.

ARTIFICIAL SOCKETS.

The following humorous account of an operation by Dr. Morrison is extracted from a private letter to the editor, but it is so apropos to the article by Dr. Southworth, in this number, and it so clearly describes a case with which a number of western dentists are more or less familiar, and which we think antedates the cases of Dr. Younger, that the temptation to print it is irresistible. If the author of the letter is offended by its public use, the readers of this paragraph will please apologize to Dr. Geo. L. Field, of Detroit :

"A Right Superior Cuspid, instead of erupting in its proper place in the jaw, got on a tear, and when it undertook to fall into line found that the ranks were closed up. The "three months' man," as we used to say some few years ago, during the "unpleasantness," had served his time and had been mustered out of the service, and the fellow who was to take his place, and had "enlisted for the war" was, as I have said, off on a big drunk, or something of the kind. The order to "right dress" had been given, and had been obeyed. The gap was filled up, and Mr. R. Cuspid was left out in the cold. So he went nosing around for a place in the ranks, and in his blind hurry he ran *completely through* Mr. R. Central, just below the belt, in direct violation of the Queensbury rules. It made Mr. R. Central sick unto death. He tottered on his feet, and could hardly keep his place in the ranks. Drs. Spalding & Park, surgeons of the Odontological Regiment, attended upon the poor fellow, and gave it as their opinion that if Mr. Canine was only removed and sent to the guard house, or somewhere else, the chances for Mr. Incisor's recovery were, in their opinion, fairly good. Dr. Spalding and I had some correspondence about the matter, and I did not agree as to what would be the result. I gave it as my opinion that when Mr. Canine was made to vacate the space he was occupying in Mr. Incisor's body, Mr. I. would keel over and sleep with his fathers, and under the circumstances, that would be the best thing for him to do, as his place could be filled with a *dummy*, who would do for show, backed up with gold, like many another fellow now holding place in the regular army. The little lady who raised the company would not, however, listen to the advice of either party, and continued her search for some other surgeon, hoping for better results. In time she hit upon a man by the name of Morrison, of St. Louis, who took a different view of the case from any of us. He was a reckless kind of a chap, and took big chances. He suggested clearing the ranks of both the disabled man and the drunken brute who had run him through, and transferring from some other company a good man and true, one who had never been sick or wounded, and who would require no gold to back him up and make him stand well before the world. There was another company in the same oral cavity, only it stood lower than the one spoken of. These men were called *inferior*, but really they were quite as good as those who were their superiors, although they were somewhat demoralized, and the ranks out of line. There was one fellow so far out that there was no getting him back, and he was the cause of trouble to the rest of the men. So surgeon Morrison took charge of both companies and removed both men from the upper company, and with an implement of war called a bur bored a deep hole in the parade ground, which is sometimes called the alveolus. He then took the unruly member from this lower company by the scuff of the neck, and stood him in the place prepared for him above. The recruit took kindly to his new quarters, though he was for a time firmly bound to a couple of his comrades on each side of him. The thongs have now been long removed, and no one would ever suspect by looking at him that he ever belonged to any other company than the one in which he is now enlisted for the war. The young lady who commands these two companies is a rather frail, delicate girl, extremely sensitive, but is justly proud of what has been done for her.

"I got permission from her to let Prof. Taft make an examination of the case, and he apparently was as much mystified over the result as I was. There was absolutely *no periosteum* left where the old member stood. I forgot to say that the lower tooth which was removed to the upper jaw was a *cuspid*. Dr. M. ground it up and filled one side of it so as to make it more the shape of a central incisor, and he was quite successful in his efforts. The tooth to-day is apparently as solid as any tooth in the head, and does good service."

BAKER'S CARIES.

BY PROF. DR. HESSE, LEIPZIG.

In the Dental Institute of this city I have the opportunity of seeing a great number of patients of the commercial and laboring classes, and nothing has caused me greater surprise than the deplorable condition of the teeth of bakers. They are attacked by dental caries to such a degree that I have been able, after some experience, to determine the profession of the patient in many cases by the condition of his teeth. The caries is soft and rapidly progressive. The principal parts attacked are the labial and buccal surfaces of the teeth, and caries spreads over the surface as well as it penetrates deep into the tissues. It commences at the cervical part, and progresses more rapidly toward the grinding surface than under the gums. The approximal surfaces do not seem to be attacked more than in other patients, but in most cases a great number of teeth were already so far gone that saving them could not be thought of, neither could one form a correct opinion as to the starting point of decay. All the patients I have examined are from seventeen to twenty-three years old, that is to say, of an age when ordinarily the teeth are still in good condition. We cannot doubt but that we have here to do with a disease that is in etiological connection with this calling, and the theory of decay which Miller has of late propounded offers a very satisfactory explanation of this fact. Miller has united the chemical and the parasitic theories, having proved that by "*Spaltpilze*" an acid is generated by which the calcareous salts of the enamel and dentine are dissolved. And he has furthermore established the important fact that the production of this acid takes place in the presence of fermentable carbo-hydrates. This last fact enables us to understand why bakers are so befallen with dental caries. As long as they work they inhale flour-dust, and I believe one who rises at two in the morning and goes to rest after a night of heavy physical labor, would hardly take sufficient care to keep his teeth clean, even were he one of a more elevated class of people. It is even questionable if the bakers would derive much benefit from the cleaning of their teeth, as the time of work is sufficiently long to enable the flour-dust to do its work of destruction.

I have only seen a few children of confectioners that might be compared to the bakers in this respect, although the degree of decay in their teeth was not so intense.

But it is to be expected that the millers may compete with the bakers, and it would be desirable to receive a communication in regard to this point.

—*Deutsche Monatschrift.*

LEGISLATIVE QUACKERY.

In 1806, only eighty years ago, the Legislature of the State of New York passed a bill, and Governor Morgan Lewis signed and approved it, to pay to a notorious Hessian quack, \$1,000 for his secret remedy for hydrophobia. The remedy was to be published and its efficacy assured before the money was paid, but the quack's name is found signed in receipt of the sum on the back of the comptroller's warrant. It should be remembered that the ordinary dose of calomel is ten grains, and of opium one-half a grain.

CURE FOR THE BITE OF A MAD DOG.

1. Take one ounce of the jaw-bone of a dog, burned and pulverized or pounded to fine dust.

2. Take the false tongue of a newly-foaled colt; let that be also dried and pulverized; and

3. Take one scruple of the verdigrease which is raised on the surface of old copper by laying in moist earth: the coppers of George I. or II. are the purest and best. Mix these ingredients together, and if the patient be an adult or full grown, take one common teaspoonful a day, and so in proportion for a child, according to its age. In one hour after take the filings of one-half of a copper of the above kind, if to be had; if not, then a small increased quantity of any baser metal of the kind, this to be taken in a small quantity of water. The next morning fasting, or before eating, repeat the same as before. This, if complied with after the biting of the dog, and before symptoms of madness, will effectually prevent any appearance of the disorder, but if after the symptoms shall appear, a physician must immediately be applied to to administer the following, viz.: Three drachms of the verdigrease of the kind before mentioned, mixed with half an ounce of calomel, to be taken at one dose. This quantity the physician need not fear to administer, as the reaction of the venom then diffused through the whole system of the patient neutralizes considerably the powerful quantity of the medicine; and secondly, if in four hours thereafter the patient is not completely relieved, administer four grains of pure opium, or 120 drops of liquid laudanum.

N. B.—The patient must be careful to avoid the use of milk for several days after taking any of the foregoing medicines. JOHN M. CROUSE.

DENTAL JOURNALS WANTED.

The editor of this journal will pay cash for the following numbers of dental journals, or an exchange will be made with those who desire to complete their own files:

THE DENTAL REGISTER.

Vol. III, Nos. 1, 2, 3.

“ VI, “ 1.

AMERICAN JOURNAL OF DENTAL SCIENCE. (Third Series.)

Vol. II, No. 8.

“ V, “ 3, 7, 11.

“ VI, “ 2, 3, 5, 7, 10.

“ VII, “ 2, 3, 7.

“ VIII, “ 6, 7, 10.

AMERICAN DENTAL ASSOCIATION.

The following is the list of officers of the Association elected at Niagara to serve for the coming year:

President—W. W. Allport, Chicago.

First Vice-President—Geo. W. McElhany, Columbus, Ga.

Second Vice-President—S. W. Dennis, San Francisco.

Recording Secretary—Geo. H. Cushing, Chicago.

Corresponding Secretary—A. W. Harlan, Chicago.

Treasurer—Geo. W. Keely, Oxford, Ohio.

Executive Committee—W. C. Wardlaw, Augusta, Ga., S. G. Perry, New York City, S. H. Guilford, Philadelphia.

Dr. E. T. Darby, Philadelphia, in place of J. N. Crouse, resigned.

Dr. A. W. Harlan, Chicago, in place of Dr. C. N. Pierce, resigned.

The Southern Dental Association was by vote invited to hold its meeting with the American Dental Association at Asheville, North Carolina, next year.

AT NIAGARA.

Some of the new things exhibited at the Niagara meeting mark a decided advance in mechanics. Among them were the continuous-gum gas furnace of Dr. C. H. Land of Detroit. With this it is quite practicable for any competent dentist to make a better class of work than has been attempted by the average practitioner, both in plates and crowns.

Dr. G. W. Melotte's system of crown work attracted universal attention. The method of duplicating crown surfaces, by means of his impression compound, was strongly approved.

The crown and bridge work of Dr. Knapp, of New Orleans, was without doubt the most beautiful and artistic that has been exhibited. His nitrous-oxide compound blowpipe was a revelation to most of those who saw its possibilities.

Dr. S. G. Perry presented some improvements in the dental engine, which instantly caught the attention of every practical man.

"DANIEL'S MEDICAL JOURNAL for July says: In dismissing these (Pancoast, Shoemaker, and Atkinson) Southern and Western sympathizers, the Jefferson Medical College has lost its last hold on the patronage of the South and West."

We will back the new concern (the Medico-Chirurgical College) to the extent of our humble ability, and will urge the profession of the South and West to stand by them, as they stood by us in the affairs of the Congress, and suffered for opinion's sake.—*Weekly Medical Review*.

Is it the fact, then, that the Congress is a peculiarly Western and Southern affair? Our two exchanges seem to speak as if it were, and that is what is charged in the east. Why should sectionalism pervade even professional and scientific circles, and how is it that this feeling seems mainly confined to the South and West?

MRS. W., forty-five years of age, housewife, fell down stairs, striking her face against the railing, from which she sustained quite a severe contusion of the right cheek, with effusion of blood under the conjunctiva, from the outer canthus to the margin of the cornea. When first seen she was suffering from a slight frontal headache, for the relief of which the writer applied to the forehead not more than six or eight drops of sulphuric ether with a camel's hair brush. The patient at once said, "That is ether, and it is putting me to sleep," and in less than half a minute she was fully under the influence of the anæsthetic, remaining unconscious for several minutes, and upon recovery, and for some time afterwards, presented all the symptoms following profound and prolonged etherization. She could not have inhaled more than three to five drops of the ether, as it was immediately washed from her forehead.—*Med. Record.*

DR. WIDMARK, a Swedish surgeon, having as a patient a young girl in whom he was unable to detect the slightest pathological changes in the right eye, but who was completely blind on the other side, observing considerable defects in her teeth, sent her to M. Skogsborg, a dental surgeon, who found that all the upper and lower molars were completely decayed, and that in many of them the roots were inflamed. He extracted the remains of the molars on the right side, and in four days' time the sight of the right eye began to return, and on the eleventh day after the extraction of the teeth it had become quite normal. The diseased fangs on the other side were subsequently removed, lest they should cause a return of the ophthalmic affection.—*The Annals of Hygiene.*

AMONG THE hard worked pupils of the Paris public schools, the teeth become deteriorated in a few weeks after entering. The second dentition is often premature. These observations confirm the statements of Dr. J. L. Williams, who has given great attention to this subject. He has shown that any mental strain shows itself upon the teeth in a short time, in increased decay as well as in increased sensitiveness of the dentine. Dr. D. M. Parker has reported that the same changes are always apparent in those who are training for athletic trials. As there is not the slightest doubt of the accuracy of these observations, they show that these are matters which demand serious consideration from educators.—*Boston Medical and Surgical Journal.*

A CORRESPONDENT OF THE *Medical Brief* states that Mr. Savory, President of the Royal College of Surgeons, was recently going round his wards at St Bartholomew's Hospital, when he came to a case of hernia just operated upon. Turning to one of the students following him, he asked: "You have passed, have you not?" An affirmative answer was returned. "What is a good thing after an operation for hernia?" "A dose of opium." "How much would you give?" "Ten grains." "How would you give it?" "The liquid extract." "How much of it would you require to give you ten grains of opium?" "Half a dram." "It will not be long before they require an extra coroner in the district where you settle down," was the comment.

VOGEL relates the following in his "Diseases of Children:" I once treated an American lady, who still suckled her son, who was *two and a half years old*, till one morning, when the strongly-developed robust child was called to be nursed, he very kindly replied, "I thank you, mamma; the nursing is too tedious for me."—*Exchange*.

Well, it is safe to wager that the boy had never known what indigestion or diarrhœa was, and that he had sound teeth, and was likely to have more of the same kind.

DR. E. A. BOGUE, one of the secretaries of the Dental and Oral Section of the International Medical Congress, requests us to say that his address from August 10 to Jan. 1, 1887, will be 39 Boulevard Haussmann, Paris, France. After that date he will be at home at 29 East 20th St., New York City.

It has been suggested that those who are willing to contribute papers upon any subject in which they may be specially interested shall inform either of the secretaries of such willingness, to be followed as soon as possible by an abstract of the paper.

DR. FRANK H. HAMILTON, the eminent surgeon, died in New York City on the 11th ult. For twenty years Buffalo was the home of Dr. Hamilton, and more than forty years ago, in connection with Austin Flint and James P. White, he founded the medical department of the University of Buffalo, and was its first Professor of Surgery. All three of these eminent men passed away within a brief period.

A YOUNG MAN entered the dispensary of the Chicago Polyclinic recently, and going up to the clerk held out one of the dispensary circulars, with the question: "Say! isn't this the hour for the diseases of women?" The clerk answered in the affirmative, when the young man said: "Well! I've got a disease of a woman and want to be treated."—*Jour. Am. Med. Association*.

THE LEGISLATURE of the State of Maryland has repealed the provision of the law which subjected graduates of other dental colleges to an examination by her own faculties. Such an act should never have been passed, as it gave rise to charges, no doubt false in themselves, but which had the semblance of probability.

MANY DENTISTS are exceedingly troubled by Hyperidrosis or excessive sweating. When this takes place upon the hands it makes their touch very disagreeable to many people who may be their patients. Washing the hands with a saturated solution of boracic acid is often effective as a cure.

"MY DEAR," said a frightened husband in the middle of the night, shaking his wife, "where did you put that bottle of strychnine?" "On the shelf next to the peppermint." "Oh, Lord!" he groaned, "I've swallowed it." "Well, for goodness sake," whispered his wife, "keep quiet or you'll wake the baby."

CHICAGO got its full share of the offices at the late election of the A. D. A. The President, the Recording Secretary, the Corresponding Secretary and one member of the Executive Committee hail from that city. The last two offices are worthily filled by Dr. Harlan.

"I AM AS much opposed to intemperance as anybody," said Smith. "but, nevertheless, liquor rightly used is a blessing to humanity. When I was ill last year, I really believe it saved my life." "Very likely," said Brown, "but how does that prove that liquor is a blessing to humanity?"

THE TITLE OF DOCTOR was invented in the twelfth century, at the first establishment of the Universities. William Gordeina was the first person upon whom the title of Doctor of Medicine was bestowed. He received it from the college at Asti, in 1329.

AN EXCHANGE SAYS, "If a child does not thrive on fresh milk, boil it." This seems like very imprudent advice. In many localities there is an extreme prejudice against boiling babies, and a boiled baby is no better than a raw one, anyway.

"ARE YOU having much practice now?" asked an old practitioner of a young graduate. "Yes, sir, a very absorbing one," was the answer. "Ah! I am glad to hear of it. In what line is your practice, mostly?" "Well, sir, particularly in economy."

CONVULSIONS may frequently be cut short like magic by turning the patient on his left side. The nausea as an after effect of chloroform or ether narcosis may generally be controlled in the same manner.

"DO YOU understand the language of flowers and of colors, doctor?" said a lady to a bachelor physician. "This is a dandelion, and yellow means jealousy." "No, madam," was the answer, "yellow means biliousness."

MOLIERE said that doctors are those who pour out medicine about which they know little into bodies of which they know less, in order to cure diseases of which they know nothing at all.

THE MUCH-ADVERTISED "Cuticura Ointment" has been found to consist of petroleum jelly, colored green, perfumed with oil of bergamot, and containing two per cent. of carbolic acid.

DR. T. W. EVANS, of Paris, has received the decoration of the "Order of the Polar Star" from the King of Sweden, in acknowledgment of successful treatment at his hands.

DR. A. A. BLOUNT, formerly of Springfield, Ohio, whose years since went to Geneva, Switzerland, to practice, has returned to this country and will probably remain.

THE ODONTOGRAPHIC JOURNAL is growing larger, better and prettier with each number. It is beautifully printed, and its editing leaves little to be desired.

THE Independent Practitioner.

VOL. VII.

OCTOBER, 1886.

No. 10.

Original Communications.

NOTE.—No paper published or to be published in another journal will be accepted for this department. All papers must be in the hands of the Editor before the first day of the month preceding that in which they are expected to appear. Extra copies will be furnished to each contributor of an accepted original article, and reprints, in pamphlet form, may be had at the cost of the paper, press-work and binding, if ordered when the manuscript is forwarded. The Editor and Publishers are not responsible for the opinions expressed by contributors. The journal is issued promptly, on the first day of each month.

NOTES ON THE DECAY OF HUMAN TEETH.

BY PROF. W. D. MILLER, BERLIN.

Four or five years have now elapsed since what may be called the chemico-parasitic theory of tooth decay came into prominence, and since that time it has been very steadily gaining ground. A very great obstacle in the way of its advancement has been the general lack of information as to the conditions of growth and physiological action of fungi, particularly those of the human mouth. It is, however, to be hoped that the work begun by the Illinois State Dental Society, under the leadership of Dr. Black, will be taken up by other societies, and soon bring about a better understanding upon this most important subject.

It is not my object in this paper to go over the ground which I have pretty thoroughly traversed in other papers, but rather to call attention to some isolated points in the etiology of decay, as well as to a few points where I have not been quite correctly interpreted.

While many of the views regarding dental decay which I labored to establish two or three years ago are now accepted without reserve, and others have lately been completely confirmed by Drs. Black,

Sudduth and others, I am not aware that a single point has been made by anyone which could in any way impair the validity of the conclusions at which I then arrived.

ON THE PHYSIOLOGICAL ACTION OF FUNGI.

There seems to be not a little misunderstanding, even among those who have given more or less attention to the subject, as to the physiological or chemical action of the fungi of decay, and the opinion is prevalent that during the first stage (decalcification) one fungus is present, but during the second (solution of the softened matrix) another. Arkövy even goes so far as to assume a special organism for *Caries chronica*, another for *Caries acute*, and a third for *Caries acutissima*, etc.

I have already clearly demonstrated in this journal, that any fungus of the human mouth, whether temporary or permanent, which can affect a fermentation of starch or sugar may be instrumental in bringing about the first stage of decay; that any which possesses a peptonizing action may, by dissolving the softened dentine, produce the second stage; and that any which possesses both properties (and there are many such in the human mouth) may accomplish the whole process of decay. The micro-organism which produces the decalcification may also produce the solution of the decalcified substance.

I have also shown in these pages that the reaction produced by a given fungus depends, in many cases at least, upon the nature of the culture medium. For example, the comma bacillus which I found in the human mouth liquefies the boiled white of egg (it also liquefies decalcified dentine), with the development of strongly alkaline products and offensive odors; in beef-extract sugar solution the reaction is distinctly acid, with no trace of bad smelling products. The reaction of a solution containing a pure culture of a fungus can, in the majority of cases, be made neutral, alkaline or acid, at will, by varying the relative amounts of albuminous and saccharine substances present in the solution. In a like manner the reaction in a cavity of decay must depend to some, if we may not say to a great extent, upon the relative amounts of nitrogenous and non-nitrogenous materials in the cavity. This fact will explain an appearance frequently to be met with in the oral cavity. We find a tooth badly broken down, the pulp ulcerated or gangrenous, the

gums having grown into the cavity and constantly irritated by the sharp edges of the tooth likewise inflamed and suppurating. We have here an excess of nitrogenous material, and a putrid, alkaline condition. Instead of a thick layer of softened dentine, we find a thin, black, or dark brown layer of comparatively hard dentine, a condition which has led to the statement that decay of pulpless teeth is essentially different from that of normal teeth.

We need not go far for an explanation. The already softened dentine has been for the most part dissolved, and, owing to the *present* alkaline condition, no farther decalcification can take place. From this condition to one of rapidly advancing decalcification we find every transition.

DECAY OF BAKERS' TEETH.

One of the most convincing features in favor of the chemico-parasitic theory is its ability to account for the most diversified phenomena of decay. A striking proof of this is furnished by an article on the above subject from Prof. Dr. Hesse, in the *Deutsche Monatsschrift*.* Hesse finds that bakers suffer to a surprising extent from decay of teeth, affecting principally the labial surfaces. He attributes it to the fact that bakers constantly breathe in flour, which is deposited upon the surfaces of the teeth, where it speedily ferments, after being converted into sugar by the diastase of the saliva. I recorded in this journal an experiment in which a glass tube filled with flour and tied to a tooth in the mouth showed a strong acid reaction in a few hours. Hesse looks upon the rapid decay of bakers' teeth as a confirmation of the theory which I have supported.

CARIES UNDER FILLINGS.

In regard to this subject, I have not been quite correctly understood. *All* bacteria require moisture for their proliferation. The majority of them (the *ærobes*) require oxygen; a few (the *anærobes*) grow better without oxygen; some grow equally well with or without (here belong a number which I have met with in the mouth), while very many, if not all, may subsist for a short time on the oxygen contained in the medium in which they are found.

From these facts every one may draw his own conclusions. If softened dentine is left in a cavity it should, in every case, be per-

* A translation of this article will be found in the September number, page 527.—*Editor*.

fectly sterilized and dried (with warm air) before filling, and the filling must, of course, be water tight. Only under these conditions can we with certainty prevent the softened dentine from farther decay, since the mere exclusion of air is no guarantee against the action of the fungi.

LIME-SALTS AS ANTACIDS.

The lime-salts of the tooth are usually spoken of as antacid, and therefore as speedily neutralizing the acids of decay. This is only in part right. The carbonate of lime is antacid, but the phosphate, which makes up the great bulk of the lime-salts, is not; *i. e.*, it cannot neutralize the acids of decay. Add as much phosphate of lime to a weak solution of lactic acid as it will dissolve, or even an excess, and it will be found to be as strongly acid as before, and in this condition it still appears to retain the power of softening dentine, though not as rapidly as an equally strong solution to which no phosphate has been added.

A drop of lactic acid applied to dentine does not, therefore, extract that amount of lime-salt which is necessary to neutralize it, but rather that which is required to form a saturated solution of the phosphate after, of course, deducting the amount which has been neutralized by the carbonate. In another paper I will discuss this point more fully, and endeavor to present some interesting facts which grow out of it.

TEST FOR LACTIC ACID IN DECAYING DENTINE.

Prepare a mixture of carbolic acid and chloride of iron, as described in previous numbers of this journal (the color must not be too deep). Put about 3 c c., say a large thimbleful, in a test-tube, and carefully add the softened dentine from a decaying tooth; let it stand from ten minutes to two hours in a dark place, and a yellow color will usually appear around the pieces of dentine, indicating lactic, citric, tartaric or malic acid, and in consideration of the fact that lactic acid fermentation has been proved to be constantly going on at certain points in most human mouths, furnishing pretty conclusive proof of the presence of the first mentioned acid in decaying dentine.

This is the same result which I arrived at by the very laborious and difficult process of treating large quantities of decayed dentine with sulphuric acid, extracting with ether and forming the zinc-

salt. The amount of acid present in a decaying tooth is not always sufficient to produce the reaction clearly.

PIN-HOLE CAVITIES AND "CARIES INTERNA."

In practice we not uncommonly meet with cases where a very small opening through the enamel is the only external indication of a very large cavity in the dentine, and even when the enamel is apparently not yet broken through, we may find, on cutting into it, a cavity already forming, or at least a considerable softening in the dentine, giving rise to what I think has often been mistaken for "caries interna." We frequently ask ourselves the question: Can the small particles of food which may enter through so minute an opening bring about so extensive a decalcification? Recent observations have rather inclined me to the view that it must, or at least may, be so.

In explanation of the first case, I have seen the same appearance exactly in pulpless teeth, and have produced it artificially. I have a second temporary molar which was exposed for seven months in a fermenting solution. It shows three pin-holes on the grinding surface, one of them extending nearly to the pulp and undermining the enamel in all directions. Here there was nothing present to produce the effect described, excepting the chemico-parasitic factors.

In explanation of the second case, I have observed that acids may work their way through enamel in sufficient quantity to produce a softening of the underlying dentine, without completely breaking down the enamel, or revealing a cavity to the naked eye or a blunt instrument.

I have specimens in which the dentine is infiltrated with micro-organisms and beginning to dissolve, while the enamel covering is still not completely disintegrated. In all cases of this nature interglobular spaces naturally play a very great role. In teeth of very inferior structures the dentine is in some places a mere framework, which is quickly softened, even by very weak acids. It must, furthermore, be borne in mind that in mastication food is subjected to considerable pressure, by which it may be forced through the smallest cracks and openings. We have all seen how particles of food may find their way to the very apex of a root canal which we have under treatment, if we allow it to remain open for a day.

(TO BE CONTINUED.)

PROFESSIONAL COURTESIES IN CONNECTION WITH WHAT ARE
COMMONLY CONSIDERED FAILURES IN DENTAL PRACTICE.

READ BEFORE THE NEW JERSEY STATE DENTAL SOCIETY.

BY C. E. FRANCIS, D. D. S., NEW YORK.

The course of human effort seldom runs smooth, and the daily routine of active life is checkered by varied experiences that denote a perpetual contest between fortune and fate.

An ancient proverb declares that "All creatures are victims to circumstances," and certain it is that to a large extent circumstances frame men's opinions and govern their actions. And likewise do circumstances revolutionize established ideas, modify fixed methods and vary the ever-flowing currents that sweep the shores of prosperity or adversity. Inclination may suggest enterprises which adverse circumstances render difficult or impossible to execute, and tasks undertaken with fair hopes of success often terminate in failures and disappointments. Unforeseen contingencies possibly arise; unfavorable conditions appear; opposing influences prevail to frustrate earnest efforts or disappoint reasonable expectations.

A dentist's experience is exceedingly varied and beset with numberless difficulties, perplexities and trials. He may be ever so skilled in the dental art and possess the requisites that especially fit him for his calling, yet he cannot invariably overcome impending obstacles, nor count on uniform or absolute success. No man is infallible, however he may boast, for infallibility is not a human attainment. Failures occur in all quarters, and every mortal has a proportionate share of them. If individuals see not their own imperfections, perhaps others do, yet occasional ill success does not indicate absence of manipulative ability, nor a total lack of talent or genius.

It is well to hesitate before condemning operations that our neighbors have performed, for it is possible that no better results would have followed had like tasks, under similar circumstances, been attempted within our own doors. Before hurling offensive mis-

siles at others, it may be wise to consider if the fortifications erected for our own shelter are not citadels of glass.

It is unfair to judge harshly from a failure observed, and to gauge its author accordingly, for perhaps other operations from the same source might exhibit evidences of marked skill and sound judgment. Unfortunate it is, that some individuals are too ready to pass unfavorable comment upon the works of others, especially if in the least degree faulty, without possessing sufficient generosity to credit them for achievements that are eminently successful, and that bear the stamp of excellence.

It would almost seem as if in every trade or profession certain members imagine that the only possible way of gaining a reputation for themselves is in undermining the reputations of other members of their calling. In efforts to reach the goal of fame they would make stepping stones of their fellows, and do them injury at every tread. Sensible people, however, are not unlikely to distrust those who speak uncharitably of their compeers, and it frequently happens that ungenerous comments reflect unfavorably upon parties who utter them.

When dismissing our patients, we are not always sure that they will return to us for future treatment. In the course of time many will get into other hands. Some remove to distant localities, and find it inconvenient or impossible to come again. Others, by nature, are inclined to wander and are fond of making changes. Some change with a view to economy; others, perhaps, from lack of confidence or a fancied neglect. Some fail to return because bills for former operations remain unpaid, and such parties are usually ready to misrepresent or malign those whom they have defrauded.

Many an excellent and faithful dentist has been declared the author of discreditable operations which he never performed. Many have been charged with having inserted fillings (with assertions that they soon after "fell out,") in cavities that had never experienced the touch of a dental instrument! The decay and destruction of entire dentures, resulting from sheer neglect and carelessness on the part of individuals who possess them, are often charged as malpractice on the part of some dentist who, perhaps, simply introduced a single filling, or removed beds of calculus and polished the stained surfaces of enamel.

"Your dentist has shamefully neglected your teeth and allowed

them to go to destruction;" remarked a New York dentist recently to a lady, who, in emergency, called upon him with a request that he would quiet the rebellious demonstrations of an aching bicuspid, which, however, he failed to accomplish. Could this man have known the history of the case, he probably would not have ventured on so untruthful a statement. Fortunately, the lady rebuked him for the unjust insinuation.

To take for granted all that comes to our ears from disaffected or grumbling visitors is neither wise nor just, and certainly "fuel should not be added to the fire" by sympathizing with their complaints or endorsing their scandal.

There are various ways of doing injustice and injury to our neighbors, even without charging them with incompetency, or denouncing them as charlatans. A feigned look of astonishment when scrutinizing their work, a significant shrug of the shoulder, or a disapproving shake of the head, will have the effect of undoing confidence in the operations of their former dentists, and sometimes prove even more damaging than open denunciations. To ask if the doctor was not in a hurry when he filled their teeth—if the doctor *himself* performed the operations—if the work was not done by his student—if the doctor's eyesight is not failing him, etc., are insinuations that excite suspicion, and convey the idea that operations have been slighted. Nor does it make things smoother to add in a semi-apologetic manner that "the doctor was considered a pretty fair sort of a dentist *once*, but unfortunately he is getting old." All this is needless, and generally uncalled for. It inflicts injury on those to whom such references are made, and fills with distrust the minds of those who have received their attentions. And to sum up, no good whatever can result from such ungenerous criticisms.

The causes that tend to failures following dental operations are many, and when duly considered, it seems a wonder that there are not more of them. Very many individuals defer their visits to the dentist until driven by dire necessity to seek relief from pain, and it is then found that their teeth are in a sad plight. Some cases present large approximal cavities, or crowns so decalcified and broken down that reliable walls for the retaining of fillings can hardly be secured. Exposed pulps, congested pulps, dead pulps and alveolar abscesses, also manifest their presence; and yet it is often

expected that such dilapidated and diseased organs can be so restored that they will promise even better than before they became so wretchedly neglected or abused.

People who are so willfully careless and negligent concerning the preservation of their organs of mastication are not entitled to a very great degree of sympathy if trouble ensues. Some sufferers seem to obtain a little grim satisfaction if they can only saddle the responsibility of their mishaps upon others, and their dentist is, in some instances, a very convenient scapegoat on whom to work their saddle. When discontented parties come to us with their complaints, it is clearly our duty to vindicate the good standing of our *confreres* as the occasion offers, and at the same time remind our visitors that personal interest and vigilant care on their part is requisite, if they expect to escape consequences that neglect is apt to engender.

A few days ago a letter came to me from Dr. Quinby, of Liverpool, in reply to a communication previously addressed to him concerning one of his patients, who, when on a recent flying trip to this country, called on me for a little personal attention. The doctor, in his letter, pictured the patient as a "bird of passage," and who never thinks of treating his teeth to any sort of attention until just ready to start for some distant clime, then allowing such limited time for treatment that they cannot be properly cared for. Dr. Quinby also adds: "There is no satisfaction in trying to do anything for men who do not take an interest in their teeth themselves—men who try to make a sort of father-confessor of their dentist, getting absolution from him once a year, and throwing all their sins of omission and commission on his shoulders." Here, gentlemen, you have a comprehensive essay in a few words, and from a fellow practitioner whose utterances are noted for wisdom and sound sense—a gentleman who well understands the difficulties that his fraternity have to contend with, and who is ready to sustain and defend them at every point.

And now, fellow practitioners, let us do justice to others as we would wish justice done to ourselves, and may we never forget that professional courtesies of every sort are much like "bread cast upon the waters," rewarding us with happy reflections, and inducing a reciprocation of kindly courtesies, with the hearty good will and esteem of our professional brothers.

POPULAR APPRECIATION OF DENTISTRY.

BY L. C. INGERSOLL, D. D. S.

READ BEFORE THE ODONTOLOGICAL SOCIETY OF WESTERN PENNSYLVANIA.

Every current of thought running through the popular mind has, at its source, originating causes. We can best learn how to deal with the popular sentiment concerning dentistry by inquiring into its origin and development. Ideas have a development from a germ, the same as do organic and tangible things. Let me start out, therefore, with a few germinal thoughts.

1. It is impossible to dissociate a man and his calling. In some countries of Europe and the old world, the calling makes the man. The social life, the business relations and the accumulated results of a man's life, are determined by his calling. In the early days of this country, the same was true here. Certain callings were honorable and highly esteemed, and the work of men engaged in them was highly appreciated. But it was well understood that men desiring to enter these high and honorable callings must be specially qualified for them. When once initiated, the calling itself made the esteem and wealth of the community accessible to the man holding the position.

In these modern days of democratic America, signs are changed; the man is not known by his calling. The calling does not make the man. Once, to call a man *Doctor*, was to fix the eyes of many passers-by upon him as a man to be highly esteemed for his work's sake. To call a man *Honorable*, was at once to place him high in the ranks of society. To call a man *Professor* was, in the popular mind, a perpetual endowment of learning. But now, when any one who deals in patent medicines, or sells corn plasters, calls himself, and is called by others, *Doctor*—and when a member of the common council of a small village has the title of *Honorable*, as well as the Senator of the United States—and when the barber and the writing master, as well as the learned collegiate, are called *Professor*, the popular sentiment is, that the man makes the calling—that the calling is just what the man makes it to be. The various pursuits in life are esteemed and appreciated for just what those who are engaged in them make them. *First* the man, *then* his calling.

2. That which is most highly appreciated among men is mental

endowments and culture. It is not so much what a man does, as the amount of brains he takes into his work. Two men are engaged in railroading; one is the Irish plodder with his wheelbarrow, the other the genius who superintends and manages the road. The appreciation of the services of the one is measured by the \$1.50 per day which he receives. The appreciation of the services of the other is measured by the \$25.00 per day which he receives. The difference is created by the different mental capacities of the two men. It is not strength of muscle, cunning workmanship, deft fingers and manipulative skill, but the brain that employs the strength and guides the fingers, which can command a large remuneration for services. Examples like the foregoing are numerous.

3. Dentists are no exception to the general rule. The man who puts the most brains into his work can command the highest appreciation expressed in fees. There are men of high education and culture in the dental profession, who employ their education and engage their minds and best thought outside of their profession. Elihu Burritt, the learned blacksmith, employed his talent outside of his shop, and became master of fifty-two languages. But his linguistic learning added nothing to his work at the anvil. Hence his shop-work was not more appreciated because of his learning. The callings of some men of excellent minds and culture are such as to afford no scope for their study. They cannot put into their work the study and thought of which their minds are capable. They are compelled to go outside of their callings to find suitable employment for their minds. But this is not the case with dentistry and the dental profession.

When, in times past, dentistry was made simply a mechanical and manipulative art, there was little in it to invite the attention of men of good mental capacity who loved study. But since dentistry has grown into a deep and profound science, it affords scope for the best minds, and he who studies dentistry most is best capable of getting out of it what is most valuable and appreciable for mankind.

What is most valuable in dentistry is obtained only by study and research, and the value increases in proportion to the amount of brain-work employed in developing it. A shallow and superficial view of dentistry develops the shallow and superficial dentist, whose work is appreciated for all it is worth.

It is the comprehensive view of dentistry that inspires a man to

enthusiasm in the pursuit of his profession, and to become the progressive man whom the intelligent and progressive people of the town like to meet and to employ. It is not enough, then, that a man should be educated and learned, but that he should be known as employing that education and learning enthusiastically in the pursuit of his profession, and not outside of it.

4. A dentist must have a high appreciation of *dentistry*; not a high appreciation of *himself* expressed in arrogant conceit, but a high appreciation of the value of dental science worked out in a dental practice for mankind. The man who knows most of dentistry must have the highest appreciation of its value to mankind.

It cannot be expected that the people, the laity outside the profession, will have a higher appreciation of dentistry than the dentist who represents the profession in the community. What they know of dentistry they learn from the dentists. Dentists are their only teachers. The truest value of the teeth can be learned only from dentists, for the reason that they have given the subject most attention.

The laity classify teeth as front and back teeth—esteeming that only the front teeth are of special value. The back teeth are regarded simply as a matter of convenience, or serving merely a mechanical support to the cheeks. If trouble occurs in a front tooth they are anxious to have it relieved, both to avoid the pain and a disfigurement of the face. But if a back tooth is in trouble and the pain of extraction is esteemed to be worse than the pain thus endured, extraction is decided upon without hesitancy. Then as to the molars as a whole—each one is regarded as of one-twelfth the value of the whole. So they are as ready to sacrifice a first molar as a third molar. How is a patron to learn that,—other conditions being equal—*a first molar is worth a hundred times as much as a third molar*, if some intelligent dentist does not explain it, and that in proportion to its value it is important to save it? How are they to understand that molars are worth a hundred times as much as incisors, unless some intelligent dentist shall take the trouble to explain the relations of the two classes of teeth to the economy of life and health?

If it can be shown to a patron that teeth have an intrinsic value—not a merely fictitious and fanciful value—such an one will be as ready to pay for securing such value as for obtaining any other value.

A lady singer came to my office with a troublesome lateral incisor, from which she had suffered greatly with an abscess at the root, and a worse trouble at the hands of a dentist who had drilled through the lateral wall of the canal and out through the alveolar process and the gum, at a point midway between the cervical margin and the apex of the tooth. I explained to the lady the nature of the trouble and the complications of disease involved, and she was disposed to have it out immediately. All her other teeth were good. I explained to her the effect of losing it—the change it might make in her voice—the trouble of a plate or of any other method of supplying an artificial tooth—that this trouble was not for a few days or weeks only, but for forty or fifty years, and as long as she lived—that there was no possible way of inserting a tooth without damaging other teeth—that she would mourn the loss of it all her days. She then asked what it would cost to treat it. With little thought of what it might cost, I replied, “It may cost you \$20.00.” Although it did cost, at ordinary charges, considerably more than that, as she was a girl without means except the earnings of her voice, I charged her no more than I at first intimated, which she pronounced very reasonable and which she did not hesitate to pay. She had on her lips the praise of the virtues of false teeth. Suppose I had silently accepted it? This case serves to show the importance of explaining, in the minutest particulars, the far-reaching damage incurred by the loss of the teeth. To escape this long train of evils, she was willing to pay as liberally as her means would allow.

How many people, outside the dental profession, know that there are diseased conditions in the mouth that lay the foundation for the worst forms of dyspepsia and a life-long trouble, and that this may begin in early childhood; that the nervous system may be completely undermined and the tortures of neuralgia be made a habitual complaint, from no other cause than diseased teeth; that nutrition may become so impaired by dental diseases that a skeletonized body may present itself daily at a bountiful table and remain skeletonized?

These well-known results of dental lesions must be made the theme of daily lectures at the dental chair. Every important operation should be of a clinical character, and made the basis of valuable instruction.

It is not expected that the lower classes will appreciate dentistry for more than the relief it gives to present suffering. Hence it is not uncommon to find persons who will not have a tooth treated and saved if it will cost more than to have it extracted. The paying patronage of dentists comes from the higher and more intelligent classes; not because of their wealth or their better learning, but their general intelligence and mental culture enables them to understand better, when explained to them, the true value of anything, and their better financial condition enables them to obtain what they most value. Upon this class it pays to bestow thought and time in giving intelligent instruction.

The point to be made is the value of dental operations in promoting personal comfort, health and longevity, the preservation of the form of the features, personal identity, and the pleasures of social intercourse without embarrassment, as well as presenting old age freed from its most unwelcome deformity.

The rule should be "line upon line, precept upon precept, here a little and there a little" of intelligent instruction touching the deeper and more important results of dental operations than those immediately experienced—results pertaining to the long future of their own lives and the well-being of their posterity, whose lives may be made miserable or pleasurable by inheritance.

A dentist's patrons must be made to feel that he is truly honest in his dental operations—that he is not working simply to get a living—that he does not talk dentistry for the mere dollar's sake, but that in his dental skill and knowledge he holds a high trust for the benefit of his fellow men. All kinds of trickery, deceit, and covering up of conditions or results, should be as foreign to him as to sun-light. All that he says and does should have the openness of christian day-light. This perfect frankness and honesty creates in the mind of a patron confidence and trust, which is the only foundation upon which can be built a successful practice.

GELATINE FORMING MICRO-ORGANISMS.

BY G. V. BLACK, M. D., D. D. S., JACKSONVILLE, ILL.

I have succeeded in isolating several species of gelatine forming oral cocci, which are very much alike, however, except as to rapidity

of growth. The one in which I have been most interested is a wonderfully fickle plant, so much so that I have had great difficulty to maintain continuous growth of it. It is often impossible to replant or transfer it after the lapse of twenty-four hours. It seems necessary to do this twice or three times daily to keep it going. A tube planted with a colony picked out of a gelatine plate becomes almost as white as milk within three hours, and within fifteen to twenty-four hours the entire contents of the tube (peptonized broth with 2% of sugar,) is gelatinized so perfectly that upon inverting it there will, at most, only a drop of clear fluid appear. This gelatine is for the most part built up from the bottom, or from the sides of the tube. There is nothing like a film on the top, at any time. It seems to grow best at a temperature above 100° F. and my observations thus far go to show that it is essentially the organism of *sordes in fevers*. The tubes have a faint yellowish cast, and in case all the fluid is not solidified, that which remains is as clear as crystal, and markedly acid in reaction. In gelatine tubes it grows in the form of vesicles, the contents of which are lighter in color and more transparent than the gelatine about them, and on gelatine plates its colony looks more like the pits left in the skin by small-pox, than anything else with which I can compare it. They appear sunken, very transparent, and a shade lighter than the surrounding portions. They do not grow large enough to be seen by the naked eye, and if not taken off early refuse to grow in any of the media that I have tried. In most persons whom I have examined, this coccus is found far back on the dorsum of the tongue, and occasionally I find it scattered generally through the mouth. It is a Streptococcus in form of growth, but rarely forms chains of more than five or six cocci. It does not grow in pairs, or even numbers, as the other streptococci, odd numbers being seen in the chain about as often as even numbers. Yet very many diplococcus forms appear from the division of single cells.

Another form grows very slowly, requiring a week to develop. The tubes have a decided bluish cast, and the amount of gelatine found is small. In this the chains of cocci are generally longer and more regularly formed.

This A. M. I made a plant which I have held at 103° F. Now, at 4 P. M., I have four generations from it, each plant being taken after the tubes were decidedly milky. The original tube is now half full

of gelatine. This will give some idea of what this coccus may do in gumming up the teeth, tongue, etc., when fever occurs, which with its high temperature perfects the conditions for its growth. It also gives a reason for the non-appearance of sordes in some cases of fever. *The coccus is not present in every mouth.* I should say that gelatine is not quite the proper word to use in this connection. The substance does not melt or soften at high temperatures, and in many respects differs from what we know as gelatine, but it is more like that, as it appears in the tubes, than anything else with which I am acquainted.

TEETH WITH EXPOSED PULPS.

BY GARRETT NEWKIRK, M. D., CHICAGO, ILL.

The article on the above named subject, published in the July number of this journal, contains certain statements and conclusions upon which it may be profitable to make a few remarks.

First, as to the supposed typical case calling for the application of arsenic and morphia, described on page 351, I quote:

“Enter an individual in distress, either desiring extraction or relief from pain by ‘killing the nerve.’ * * I find an exposed pulp. The patient gives a history of continuous pain for a considerable period, and as I pass a spoon excavator over the exposure, slightly enlarging it, I discover an oozing of pus. The indication to me is to devitalize immediately,” etc.

The indication to most of us would be that devitalization had already taken place in the body of the pulp. Do tissues decompose before they die? If death be not already complete to the end of the root or roots in such a case, is it not a fact that it is only a question of a few hours or days of time when a line of demarkation and practical separation will exist between such root filaments and the dental nerve?

Why does the pus ooze forth? Because it is under pressure.

Why was the patient “in distress” when he entered? Because the pressure was then being exerted upon sensitive tissue at the point of least resistance, viz., the apical foramen.

Why is it relief is experienced by the “individual in distress?” Because a point of *no* resistance has been made by the excavator.

Why is it that common questions, explainable by the simplest principles of hydrostatics, must be continually repeated? Echo!

Why is it that the application of a drug or drugs in proximity with decomposing tissue should be thought to give instant relief to sensitive tissue beyond?

The author says that "in many cases the sudden cessation from agonizing pain is marvelous," as he supposed, from the application of the drug. Evidently the use of the drug in the case cited had nothing to do with the results named. We have all seen the same consequences from the simple relief of pressure, many, many times. All the dead and dying tissue needs is free vent and a little time. Ninety-nine times in a hundred the whole pulp will die; the line of separation between dead and living tissue will be at the constricted portion of the canal, at the apex of the root, if *you give it time*. The sensitiveness supposed to exist *in* the pulp is beyond it. It is excited by pushing the pulp, which causes pressure. It is excited also by pulling on the pulp, in attempts to remove it before sufficient time has elapsed for complete separation. The dead tissue pulls upon the living nerve filament at or beyond the apex.

The doctor's directions to use cocaine and cannabis indica to make the extraction of *dead* pulps by piecemeal easy seem to be unnecessary, and the theory of the persistent vitality of the lining membrane of the pulp-chamber, after the death of its occupant, is one to which we cannot subscribe.

The advice as to the use of drills and burs in root canals will not, I hope, be generally followed. If a root canal be so small that the most delicate jeweler's broach may not enter it, surely no instrument coarse enough to be driven by an engine can be trusted to follow in its path. A small bur may be used to give freer access to a canal, to give it a funnel-shaped opening where we can see it, but beyond that, as a rule, the canal should be left in its natural state. A fine, flexible, drawn-tempered jeweler's broach, delicately manipulated, will find any canal that can be found, and follow it to the end; cotton fibres sufficient for cleansing may be carried with it in nearly all cases. With or without the cotton, enough eugenol, or some other agent, may be inserted to thoroughly disinfect. When the attempt is made to enlarge the canal beyond a certain point with drills and reamers, it is all guess-work. If the canal deviates from a straight line, as it frequently does, the drill may not follow. It may strike it again or not.

A flexible, smooth broach does follow the canal; there is certainty, and not guess-work. It will also carry a semi-liquid filling, like gutta percha in chloroform, along the glassy walls of the canal to the very apex, and seal the same with a non-absorbent, indestructible material. The least sensation or consciousness on the part of the patient is an indication to the operator when the end is reached. It is absolutely impossible with any instrument to carry gold or tin foil into such canals with any definite certainty. The canals cannot be so filled without enlargement, and enlargement is uncertain.

In most cases, after using the fluid as aforesaid to seal the apex and narrower portion, a gutta percha cone of proper size and length may be used to complete the filling with certainty. When root canals have been thus found, cleansed and filled, whether it be one or four, the operator has a sense of satisfaction in work well done such as he can never experience by less certain methods.

Reports of Society Meetings.

AMERICAN DENTAL ASSOCIATION.

TWENTY-SIXTH ANNUAL MEETING, HELD AT NIAGARA FALLS,
AUG. 3, 4, 5 AND 6, 1886.

REPORTED FOR THE INDEPENDENT PRACTITIONER BY "MRS. M. W. J."

WEDNESDAY MORNING SESSION.

The meeting was called to order at 9.30, the President in the chair. The minutes of the preceding session were read and approved.

The Committee on Credentials reported delegates present from the following societies:

Illinois State Society.

California Odontological Society.

University of California.

Chicago Dental Society.

Michigan State Dental Association.

Louisiana State Dental Society.

Mississippi Valley Dental Society.

Odontological Society of Pennsylvania.
Sixth District Dental Society of New York.
Chicago Dental Club.
Connecticut Valley Dental Association.
First District Dental Society of New York.
Iowa State Dental Society.
Brooklyn Dental Society.
Eighth District Dental Society of New York.
Minnesota Hospital College, Dental Department.
Georgia State Dental Society.
Pennsylvania State Dental Society.
Indiana State Dental Association.
State University of Iowa, Dental Department.
Northwestern Dental Association.
New Orleans Odontological Society.
Pittsburgh Dental Association.

Dr. Ottofy, of Chicago, was added to the Executive Committee, to fill a vacancy.

Dr. Bödecker then introduced to the Association Dr. Wilhelm Herbst, of Bremen.

The President acknowledged the introduction, which, he said, was hardly needed, as all were acquainted with Dr. Herbst, by reputation at least. He bade him heartily welcome as a representative of German dentistry.

On motion of Dr. Atkinson, Dr. Herbst was made a member of the American Dental Association, by acclamation.

Dr. Herbst expressed in German, Dr. Bödecker translating, his appreciation of the welcome tendered him, which, he said, he was too much moved to express in words.

Dr. Crouse introduced Dr. Bryant, of Switzerland, and several members of the profession from Canada, to all of whom the privileges of the floor were extended.

On motion of Dr. Watkins, of Montclair, N. J., the thanks of the Association were tendered Dr. Bödecker, to whom the profession owed the visit of Dr. Herbst to this country.

The President remarked, in putting the motion to vote, that any man coming from abroad who can teach American dentists one single new thing should be warmly welcomed, for we were always anxious to obtain information concerning our life-work.

The discussion of Section I, Prosthetic Dentistry, Chemistry and Metallurgy, was continued. The influence of red rubber was further discussed by Drs. John Allen, Kingsley, Land, and others, but nothing new was elicited.

The subject was passed, and the report of Section II was called for.

On motion of Dr. Brophy, unanimous consent was given, and Section IV allowed to report, that Dr. Herbst might be heard on the subject of Operative Dentistry.

The report of Dr. Darby, chairman of Section IV, embraced a general review of the progress made in Operative Dentistry in the last quarter of a century; in the varieties of foil now in use, and the improvement in amalgams; in the use of the mallet, the rubber dam and the dental engine; in the preservation of pulps, and in the restoration of contour. In new appliances, he offered Dr. T. W. Brophy's band matrix, Dr. Fernandez's diamond drill, Dr. Swasey's matrix and rubber dam holder, Dr. Watkins' instruments for finishing amalgam fillings, and his new tooth brush. No papers having been presented to the Section, they asked the consideration of these subjects.

Dr. Melotte—Inquired why the appliances of Dr. Knapp were not named?

Dr. Darby—Replied that they had not been brought before the Section.

Dr. Kingsley—Said that they were purely mechanical, and do not pertain to Operative Dentistry. Had they been presented to that Section he should have protested, as, though very artistic, they were purely mechanical.

Dr. Melotte—Considered it an open question, and would be glad to hear other expressions of opinion.

Dr. Morgan—Said that, while the preparation of diseased roots required therapeutical treatment, and therefore belonged to operative dentistry, the manufacture of gold crowns and bridges was entirely mechanical, the operations requiring a blending of both branches.

Dr. Melotte—Insisted that a clear line should be drawn. According to that view, in general surgery the treatment of the stump of an amputated leg was operative, while the adjustment of the wooden leg was prosthetic surgery. In the same way the treatment of roots

was dental surgery, while making the crown or the bridge was mechanical work.

Dr. McKellops—Said the question might be discussed all day; it would be somewhat difficult to say how much, in ordinary fillings, belongs to surgery, and how much is mere mechanical work.

Dr. Parmly Brown—Said that at Minneapolis it had been decided that crown and bridge-work belonged to operative dentistry.

Dr. McKellops—Said that it required as much brain and genius to apply an artificial limb in the proper position as to operate upon the limb, and the same was true of bridge-work. Every part of this belonged to operative dentistry, as much as the filling of a tooth with gold. Only a skilled operator was competent to place such an appliance in the mouth.

Prof. Taft here rose to a point of order, the subject of nomenclature not being before the body.

The President decided the point of order well taken, and the discussion was ruled out.

On motion of Dr. Fillebrown, Dr. Herbst was invited to address the Association. His remarks were again translated by Dr. Bödecker.

He remarked that he would not repeat what he had said in New York and Philadelphia. It was well known that he had come to this country to exhibit his method of packing gold in the cavities of teeth. By this method, gold is brought into contact by rubbing against the walls, obtaining the best possible adaptation, much better than by malleting. For the success of this method much depends upon the cavity, which must have four side walls. If the tooth has not got them, they can be supplied by means demonstrated in his clinics. The patient would certainly recognize with gratification the difference between the hammer and this method. All that is done in first-class fillings with the mallet can be accomplished by this method of rotation, and there is a decided gain in time required for the introduction of the gold, in the weight of gold introduced, in adaptation to the walls of the cavity, and the consolidation of the several layers with each other. He said it was well known that the best operators in the profession, the world over, are found in America, and he had come to this country believing they would be honest and generous with him. In Europe he had shown his method to a great many of his *confrères*, but as yet they

had done but very little with it. While admitting that many American operators were men that the world cannot reproduce, very able men, who can do with their own methods more than he had ever been able to do with his, he nevertheless believed that with his method much good might be done. It was very much easier, more rapidly acquired, and demanded less skill than the mallet method. He did not believe, and did not hope that the mallet would ever be abandoned. In fact, he endorsed the advice of Dr. Bödecker, that it was safer for the beginner to use the mallet in the last layers of the filling. What he might say would be of very little consequence in comparison with the demonstrations which he hoped to give. Talking about it would not help very much, and he could not show it to all. The particular point was to be very careful about the first layer of gold introduced into the cavity. He said that he felt he was not going back without having accomplished some good. Some had comprehended his method thoroughly, and he would trust to them to show others. He begged them, however, not to throw it entirely away without a trial, not only for themselves, but for their patients, who would derive great satisfaction from it. He said that, to him, many of the best American operators looked fatigued and worn out. By practicing his method they would save time and not have to work so hard, while they would accomplish more, and do it easier. In conclusion, he hoped, in another year, to meet them all again in Washington, at the International Medical Congress.

Dr. Ottofy—Asked Dr. Herbst to state in a few words the advantages of his methods over ours; if better, in what respect is it so? He asked permission to address the question to Dr. Herbst in his own tongue.

Dr. Bödecker—Replied for Dr. Herbst, that the first claim was for better adaptation of gold to the walls of the cavity than could possibly be obtained by any other method, as had been proved in the New York clinics to the satisfaction of everyone who had examined the work then done, and also by the work done by Dr. Herbst several years ago. It was by the perfect adaptation of gold to the walls of the cavity that the tooth is saved. Gold may be hammered against smooth glass walls, and the microscope will show that the adaptation is not perfect, but if a soft piece of gold is put in, with tweezers or hand plugger, and with a rotating instrument pressed

down, or by a rotating burnisher in the dental engine, and it then be examined under the microscope, it will be found that there is absolute contact. Glass shows this better, as the contact can be seen in all portions. If such a filling is put in carmine or aniline solutions, there will be no discolorations between the gold and the glass, while in the best malleted filling thin solutions of aniline will penetrate.

Again, one-half the time is saved. In the proximal surfaces of molars and bicuspid, extending under the gum, which are generally difficult and tedious, as a rule, great advantage is gained, the most difficult operations becoming the simplest of all. In the grinding surface of molars it is better to use the mallet for the last layer, as access is easy, and a wearing surface is more readily made with the mallet by beginners. Patients who have experienced both methods will certainly ask you to fill by the Herbst method, rather than suffer from the mallet. I know it from my own experience, and all those who have had work done by both methods will bear me out.

Dr. Atkinson—Said the exposition of this method would not be complete without giving the Herbst obtunder.

Dr. Bödecker—Stated that when Dr. Herbst told him of it two years ago, he then felt as though care must be exercised, and he did not know whether he would dare to bring it out. He was sorry now that he had not given it sooner, for his experience had shown it to be perfectly safe.

A little chemically pure sulphuric acid is saturated with hydrochlorate of cocaine, and stirred with a glass rod until perfectly dissolved. This will give a test of the chemical purity of cocaine. If the solution remains uncolored, it is pure; if the sulphuric acid gets dark, it shows impurities (as carbonaceous matter) in the cocaine. To this solution is added sulphuric ether to super-saturation, still stirring with a glass rod, and it is best done in a long test tube. If shaken in a bottle, the expansion is liable to break the bottle, or force the cork out, the contents perhaps flying in the eyes. Any excess of ether will evaporate by standing. A little of the preparation is to be taken on cotton and applied to the sensitive dentine. The obtundent effect is more prompt and perfect than with anything else that has been offered for the profession. It will obtund only one layer of dentine, when another application must

be made, but its action is very prompt. Measurement is not necessary to obtain the proper proportions of cocaine and sulphuric acid, as the acid will not take up more cocaine than is requisite. The cocaine relieves the momentary pain caused by the application of the sulphuric acid.

Dr. Taft—Said that it had been his privilege to spend three days with Dr. Herbst. In regard to the obtundent, when the formula was given him it struck him as rather peculiar. He had taken it home and made it up carefully, and found that one drachm of sulphuric acid would dissolve thirty grains of crystals of cocaine. The amount of sulphuric ether was not important, as any excess would evaporate. He had used it daily for three months, and in every instance it had proved successful, and he believed it would prove generally efficacious. Its action is very simple. The sulphuric acid dissolves a portion of dentine; acting as a caustic on living tissue, the cocaine obtunds sensation during its action. The sulphuric ether serves the same purpose, relieving the pain caused by the application of the sulphuric acid. If the cavity has been formed before the application, there is no objection to leaving the powder formed of the dissolved dentine.

Though the Herbst method may not be generally adopted for all cases, there is much in it that can be utilized. It cannot be comprehended from printed instructions; it must be seen to be understood. Many will adopt it, to a large extent, for many operations and in many kinds of cavities. It is especially advantageous in cavities without angles or depressions, or points for anchorage. Sometimes, when a large mass of gold is rolled up and packed in, it is difficult to press it down and have perfect adaptation at all points; while condensing at one point it will withdraw at another; or if by another method little pieces are to be held down, it is difficult to secure uniform pressure everywhere. In such cases Dr. Herbst takes a pellet of cotton and fills the mouth of the cavity, and, holding it down, goes all over the cotton with a rotary pressure. On removing the cotton the cavity will be found gold-lined throughout, the adaptation being apparently perfect—though we should be very careful in the use of that word. If we take a stone in which there is fine engraving, this method may be employed to bring out the finest lines of carving. Gold is laid on and rubbed down through the cotton, when the carving is perfectly

reproduced in the gold: it is pressed into the minutest lines. If only for this perfect adaptation to the walls of the cavity, it is well worth trying.

Dr. Marshall—Said that, having been a patient of Dr. Herbst, his experience might be of interest. He was ready to say that, as a patient, he preferred the Herbst method to the mallet: the suffering was less than one-half as severe. The cavities filled were a molar crown cavity, and a compound distal and grinding surface of a bicuspid. The pressure was very heavy, as heavy as hand pressure in cylinder fillings: so much so that his jaws ached and he had to support his chin. The pressing and drawing motion gave a sharp click as it came against the walls of the cavity, and the feeling was as if the wall was broken by the blow. It was, however, only the sensation of the peculiar motion.

Dr. Atkinson—Said that Dr. Bödecker wrote him from Bremen that he had witnessed something new, which he would love. He had thought that he would never need anything but the mallet, but not until now had he really comprehended what the rotary method meant. He had witnessed sixteen clinics, four of which he had seen all through, one being in his own mouth, so that he knew both ends of the instrument. He was now ready to say that he had received a new revelation. There was never anything to equal it for surface fillings: he had tested it and knew it to be the densest he had ever seen. He had induced Dr. Herbst to try number 120 rolled gold, and it had worked beautifully in a skeleton, and in the jaw. Then he tried platinum and iridium-gold for wearing edges, and succeeded with that also. He recommended anyone, if he did not succeed, to go to some one who had been indoctrinated, and learn of him. He had feared the elimination of heat from rapid rotation, but had worked with a slow motion of the engine, giving a peculiar twist with the thumb and forefinger. Anyone who had learned hand-pressure could easily pack towards the wall of the cavity. The sensation of the agate point striking against the edge of the tooth was startling at first. His last words would be, should we never meet again, try it until you comprehend it, and you will never abandon it.

Dr. Marshall—Said (of friction and heat) that in the first cavity he had experienced no sensation of heat, but in the second, whether from moisture or what not, the gold lost its cohesion, and he

thought it would have to come out. He took a heavy instrument and rotated it rapidly, producing sufficient heat to restore cohesion.

Dr. Rehwinkle—Said that from a sense of gratitude to Dr. Herbst, and of duty to the profession, he would tell what he knew of the Herbst method. Three years ago he first heard of it through the German journals. In going through their contents he found the report of a clinic by Herbst, at Frankfurt-on-the-Main, and exclaimed to himself: "Hello! here is a new method, by rotation; rubbing in the gold; it is certainly fascinating in theory." So he went home, and, guided by the description thus given, began to experiment, using tin foil to avoid the waste of gold. He pegged away, but not having any standard of comparison did not know whether he was on the right road or not. Learning that Dr. Herbst had shown his kindness and self-sacrifice by going from one office to another to exhibit his method, he wrote to him for specimens showing the steps of the process.

The response was prompt, and with his characteristic generosity, he sent, not only a full line of specimens, showing all the stages of the operation, but also a set of his instruments, matrices, etc.

The only question, and one which time alone can answer, is whether it will prove durable. He would not repeat what had been already said as to the method of operating, or the apparent perfection of the work, but could fully corroborate it all. If used only as a lining for cavities, preventing the discoloration of amalgam against thin borders, it will be a great acquisition. The cavity can be thoroughly lined with gold, and the body of the filling made with amalgam. In this case, the surface of the gold should be painted with a thin solution of copal varnish, to prevent it from being affected by the mercury in the amalgam. Dr. Herbst can make a gold filling by his method in one-fourth the time it would take any other man by any other method. It gives close, or perfect adaptation, using this word in its general sense. Coming from the same country, and from the neighborhood of Dr. Herbst, Dr. Rehwinkle offered that as his apology if he seemed too enthusiastic about the man and his method, and especially his great liberality in freely giving all he has for the benefit of the profession.

Dr. Bödecker, by request, gave again, in full detail, the manner of operating, from the preparation of the cavity to the surface finishing.

Dr. C. N. Pierce—Said he felt satisfied that the results would prove of great value. Even if not generally adopted, the younger members should take it up and study it faithfully, not being discouraged if their first efforts failed, remembering that although Herbst himself had been using it for seven years, he admitted that it was only within six months that he had become fully satisfied with the results in certain cases, especially in contour work. He advised beginners to experiment on cavities in bone, or a tooth brush handle.

Dr. Watkins—Spoke with great satisfaction of fillings which Dr. Bödecker had made for him, by this method, two years ago, which have been exposed to severe service in mastication. A large filling in the anterior proximal surface of the third molar was very satisfactory; this was finished with the bloodstone instrument.

Dr. Bryant of Switzerland—Said that the method had proved very acceptable in his country, its special features being its great adaptability. For matrices he used very thin stumps of steel, such as watchmakers use for supporting the pendulum of clocks. It is extremely thin, and can be cut with scissors like paper, and it will go where silk floss cannot pass.

Dr. Morgan—Was not so sanguine of the anticipated benefits to be derived from the introduction of such an innovation.

Dr. Jas. Truman—Foresaw great danger to pulp life in the indiscriminate use of a dangerous escharotic as an obtunder of sensitive dentine.

Dr. Bogue—At this point said he would like, from the depths of his own ignorance, to ask *what the Herbst method is?* He would be much obliged for a clear definition.

The President asked Dr. Bödecker to reply, and he did so, with additional explanation from Dr. Rehwinkle.

Dr. Bogue—Did not think that the principles underlying the method had yet been reached, except in so far as it was a revival of the principles laid aside twenty-five or thirty years ago, in the hands of a very dexterous operator. Not a single new principle had been evolved. He had seen one hour and ten minutes consumed on a gold filling which he himself could have made in twenty minutes, with soft gold. He was glad to hear Dr. Rehwinkle say that Dr. Herbst was a modest man, but with all his claims his principles were as old as the hills. It was the old story of the revolving cycles.

Dr. Fillebrown—Said that in the discussion, everything but Herbst *versus* the mallet was left out of consideration, as though there had never been any intermediate method used. But there were operators who made very creditable operations without the mallet and without the matrix, and who had never tried the Herbst system. They had found that great force was not essential; that it was not necessary to hammer all the life out of both the gold and the tooth; that light hand pressure would produce a hard surface that would wear for years, resisting both the force of mastication and the inroads of fluids.

Dr. Taft—Thought the reasoning of Dr. Truman on the action of the new obtunder was hardly borne out by the facts. Sulphuric acid has been used for years in surgery, and its action is well understood. An agent so violent as is portrayed by Dr. Truman would long ago have been found utterly impracticable. While it is true that it is an escharotic, it destroys only one layer, and then it stops. It is self-limiting, and not capable of doing the mischief portrayed by Dr. Truman. His only fear was that some might be deterred from using an agent capable of rendering great service.

Dr. Rehwinkle—Added that Veratria was also a valuable obtunder, but should be used with great caution, as it is a dangerous poison. One grain of Veratria is put in three drops of absolute alcohol, and sufficient tannin added to saturate; ten drops of glycerine is then added. It is to be applied after the dam is in place and the cavity dried.

Dr. Bödecker—Affirmed the perfect safety of Dr. Herbst's obtundent, having seen its excellent effects in teeth of very delicate structure, of children ten or twelve years of age, which have stood gold fillings perfectly for several years, with no bad results whatever, an exposed pulp even, having survived, and the edges of the filling were found absolutely perfect. They were teeth in which he would not have put gold under any circumstances, but Dr. Herbst considered that gold fillings, after the application of this remedy, were the best that could be used to preserve delicate teeth.

Dr. Taft—Said that the action of the sulphuric acid was to break up the calcareous surface of the cavity, forming a layer of sulphate of lime, an insoluble powder, the cocaine protecting the exposed organic portions of the tooth. Its action was not capable of being

carried any further. The acid is satisfied with what it has dissolved, and the powder formed is insoluble.

Dr. Atkinson—Said that chemists themselves were sometimes at loose ends about their combinations, but in dealing empirically, if uniformly successful, no harm was done. We should not be alarmed by old fogies who don't know the first letters of the alphabet of chemistry. Some agents are self-limiting, and we know exactly what they will do. Sulphuric acid is one of these. Of others, however, we do not know where the mischief will end. Chloride of zinc quiets a nerve by transforming the pulp into hypochloride of albumen—as clear as glass quite to the apex. He wished to speak in defence of the man who cannot speak English for himself, and he only wished he could speak German to tell him how much he loves and admires him, not as a personality, but for his principles. If we would only put ourselves in the line of reception, our minds would soon be convinced of what is true light and wisdom.

Adjourned.

PENNSYLVANIA STATE DENTAL SOCIETY.

EIGHTEENTH ANNUAL MEETING, HELD AT CRESSON, JULY 27, 28,
AND 29, 1886.

REPORTED FOR THE INDEPENDENT PRACTITIONER, BY WM. H. TRUEMAN, D. D. S.

WEDNESDAY MORNING SESSION.

Dr. J. C. M. Hamilton, of Tyrone, read a paper upon

THE DENTAL PULP AND ITS TREATMENT.

He remarked that inflammation*of the dental pulp does not differ materially from inflammation elsewhere, and is accompanied by similar symptoms. The first step from the normal condition of a pulp exposed by caries is, when responsive to thermal changes, or to pressure, or from other causes, there is an increased flow of blood, marked by pain of long or short duration, or spasmodic with increasing severity. In the earlier stages the pain may be general and difficult to locate, but it usually becomes more fixed as the disease advances.

In the earlier stages of the disease, after locating the seat of trouble, the application within the cavity of carbolic acid, oil of

cloves, opium in its various forms, menthol, chloroform, etc., will often give relief. A preparation of pure wood creosote and oil of cloves, of each half an ounce, adding from ten to twenty grains of acetate of morphia, he recommended in these cases, having used it for a long time with most satisfactory results. He referred to an article in the June number of the *Dental Cosmos*, in which the writer condemns pulp capping as inapplicable to a pulp that has once been inflamed, even in its early stages, and advises devitalization in all such cases. Of this he did not approve. While in the later stages of the disease the risk is so great that it may be better to devitalize at once, he condemns most heartily the wholesale destruction of pulps there advised. In all cases of pulp exposure where no previous irritation has existed, or when the inflammation has not advanced beyond the first stages, he carefully prepares the cavity and in simple cases caps at once, using for this purpose a cement. If, however, inflammation is present, he allows a small pledget of cotton saturated with the preparation just given to remain in the cavity twenty-four hours at least, securely covered with cotton and sandarach varnish, after which the capping may be applied. Oxide of zinc, made into a paste with the creosote and morphia preparation, he has used as a pulp capping for the last two years, with very satisfactory results, carefully covering it with a cement, which in turn is covered with a more durable material after the lapse of a few weeks or months.

The same preparation, with arsenic added, he uses to devitalize pulps, securing by its use entire freedom from the excruciating pain so frequently following the use of arsenic alone.

Dr. H. C. Register, of Philadelphia, read a paper upon

COMPRESSED AND WARM AIR AS A GERMICIDE, PAIN OBTUNDER,
AND OTHERWISE USEFUL AGENT IN DENTAL PRACTICE.

He claimed no originality in the use of warm air, or air under pressure, in dental practice. That honor belongs to the inventor of the air syringe in general use. Several professional friends, whom he named, had used compressed air in much the same way that he would presently describe, but only to a limited extent. He had been assured by them that he had carried his investigations of the air system much farther than they had, and finding daily good results from its use, he felt it a duty to make it known. While there

is yet a diversity of opinion, it is generally accepted by the profession that micro-germs have much to do with the production of caries; this has been so clearly shown by the investigations of Dr. Miller, of Berlin, that Prof. Black, referring to them, says: "It was the most perfect work of the kind that the world ever saw. His experiments were so scientifically conducted, and the products so carefully analyzed, that he left not a hook upon which a tenable objection could be hung." With these investigations, we, as a profession, have much to do. If, by reducing these invaders of the oral territory to the minimum, we get rid of the most persistent cause of caries of the teeth, it is, therefore, meet and right that a sanitary system should be introduced into every household, to that end. Flushing the oral cavity at least once a day, with an alkaline wash, by atomization, under sufficient atmospheric pressure, would so reduce the prevalence of these destructive germs and counteract the acid found in the cavities of the teeth, that the reacting force of life would check the carious growth. He described at length the accepted theory of the origin, life history, and relation of micro-germs to dental caries, showing that moisture of a ferment character was essential to their existence, and contended that those germs which could not be washed away by atomization would be destroyed by a continuous current of air heated to 120 degrees. He suggested using this warm air current immediately before filling, in order not only to destroy any germs that may be beyond the walls of the cavity, but also to render this portion of the tooth less favorable to their existence, and to secure a more perfect adaptation of the filling.

He found the continuous warm air current an excellent pain obtunder, in sensitive dentine. In preparing for filling he adopted the following method: After opening the cavity, using the atomizer under strong pressure, he carefully washed the cavity and surrounding parts with listerine, or other like liquid. The dam is now applied and the cavity slightly dried with warm air. At first this is irritating, and sometimes produces a slight pain during its application. The thin walls are now broken down and the decay removed. If the tooth continues sensitive, it is bathed in equal parts of carbolic and tannic acid, atropia, or other like obtunder. The warm air, at about blood heat, is now applied, very gently at first, and stronger as the patient can bear it. In a few minutes sensa-

tion will be so far reduced that considerable cutting may be done, producing in most cases no pain at all. After the cavity is shaped, the air is applied and thorough dryness secured. While in this condition he is in the habit of covering the dentine, in large cavities, with a film of gutta-percha or collodion. In deep cavities phosphate of zinc may be used at the bottom and thoroughly air-dried. Cold air, which previously could not be tolerated, can now be thrown into the cavity without producing the slightest irritation. In small cavities this care is not necessary.

Devitalized teeth, to which there is no fistulous opening, but which contain a putrescent pulp, should be opened with as little pressure upon its contents as possible, making a large and free opening into the bulbous portion of the pulp cavity. The atomizer should now be brought into use under low pressure, and the putrescent matter washed out, using for this purpose any preferred wash. The dam is now applied, and air heated to the degree of toleration gently forced into the whole extent of the canals. After dryness has been accomplished, a nerve broach may be employed to carefully enter the canals and detach the dried portions, the air being allowed to fill the canals at the same time, and to lift or blow these portions out. After this has been done, he uses a mixture of iodide of zinc and permanganate of potash, of a creamy consistency, taking a small portion upon a broach, and by a gentle rotary motion forcing it into the canals, after which the warm air is applied to drive it yet further. If there now remains the slightest odor of decomposition, the treatment is repeated, or a drop or two of aromatic sulphuric acid is flowed into the canals and the warm air again force in under low pressure. The canals are now filled with oxychloride of zinc, to the oxide of which is added a few grains of iodoform. In treating putrescent pulps with a fistulous track, the same care in cleaning the canals is not required. The atomizer may be applied under strong pressure to wash out the track with tepid water, after which the desired escharotic may be used, it also being forced through by the same means. Aromatic sulphuric acid he accepted as the best remedy for general use. He objected to the use of carbolic acid at this stage, as it is not a solvent. Its after use may, however, be indicated. An over-sanguine faith in carbolic acid has, he believed, caused about as much trouble in dental practice as it has done good.

He employs the atomizer in treating pyorrhœa, using heavy air pressure to force the remedy well into the pockets, and advises its constant use, after treatment had ceased, to keep the spaces between the teeth clean and in a healthy condition. His method is as follows: First, cleanse the necks of the teeth from all foreign substances, using a germicide with the atomizer, throwing it deep into the pockets, so as to wash out all loose matter. The air is now used with a simple blow-pipe; the gums being held back by the force of the air jet, the parts are fully open to view while all hard matter is cut or scraped away down to the healthy peridental membrane by means of scalers. If the character of the detached gum calls for it, amputate those portions which are known to have lost all possible attachment to the teeth, or cut them away in such manner as to promote granulations. He recommends that the patient be provided with an apparatus, so as to keep up the treatment of atomization after each meal, and on retiring.

He uses the warm air with marked advantage in treating discolored teeth. After dressing the root and closing the opening at the apex, while the rubber dam is in position, he first relieves the tooth of as much defective tissue as the case calls for, when the warm air is thrown into every part under a pressure of from twenty to twenty-five pounds to the square inch, being heated to as high a temperature as the patient can bear. After from two to five minutes drying he makes an application of aromatic sulphuric acid of full strength, allowing it to remain a minute or two. He desires to get the solvent action of the acid; any other agent that will act upon the discolored matter and open the tubuli, and yet not act too quickly upon the dentine, would probably answer as well. The warm air is again applied, and the tooth structure rendered as dry as possible. After two or more applications of the air and acid alternately, the cavity is washed out with the atomizer under heavy pressure, catching the liquid in a napkin, so as to avoid disturbing the rubber dam. The tooth is now carefully dried, and the cavity saturated with Labarraque's solution of chloride of lime. This preparation acts both as a bleaching agent and as an alkali to neutralize any acid that may remain. The warm air is again applied until the tooth is perfectly dry; the solution of lime is reapplied, and the tooth again dried, this being repeated several times. Any bleaching agent may be used. The advantage of the air drying system con-

sists in getting rid of the moisture in the distal portions of the tooth, so that the solvent and bleaching agents may follow up the discolored matter. The manipulations here described may probably take about half an hour. When the color is satisfactory, the cavity, in greater part, is filled with gutta-percha, or zinc phosphate cement, and finished with gold filling. Cases treated in this way retain their restored color, and look well.

In conclusion, he earnestly recommended the use of an atomizer in addition to the tooth brush for daily use, a harmless alkali like lime water, or a mild germicide mouth wash being used under a pressure of from ten to thirty pounds; it is quickly done, and under that pressure the liquid is broken up and forced between the teeth, not only removing any remains of food, etc., but most effectively neutralizing any destructive agent. The doctor illustrated its use for this purpose. The effect is rather pleasant, and with a suitable mouth wash leaves a sensation of cleanliness that is very gratifying, being much more pleasant than that felt after a thorough scrubbing with a tooth brush.

The air-compressing apparatus used by the doctor resembles closely the well-known Burgess Mechanical Blowpipe, and consists of an air pump, worked by a pedal, over which is mounted the air reservoir, provided with a pressure-gauge and suitably arranged openings, to which a flexible rubber tube may be secured, the pressure being controlled by a stop-cock. Several sizes are upon the market, and being intended for office use they are handsomely gotten up. The doctor exhibited quite a collection of atomizing tubes of various shapes, and also a number of blow pipes designed for special uses. The most of them were experimental. He finds that but few are really needed. They are attached to the air compressor by a flexible rubber tube, and each is provided with a stop-cock readily controlled by the fingers of the hand that holds it, so that the air current is always under control. The apparatus is not expensive, quite simple and easily managed, and if as useful as it promises to be, is well worth having.

The reading of the paper was followed by an animated discussion, more, however, in the nature of questions concerning the use of the various pieces of apparatus exhibited, and their special uses, than upon the system itself. That was so novel, and having been used by no one present except the essayist, excited considerable interest.

The election of officers was now held, with the following results:
President—E. P. Kremer, Lebanon.

First Vice-President—H. C. Register, Philadelphia.

Second Vice-President—W. F. Fundenberg, Pittsburg.

Recording Secretary—Wm. B. Miller, Altoona.

Assistant Secretary—Jos. R. C. Ward, Philadelphia.

Corresponding Secretary—W. H. Fundenberg, Pittsburg.

Treasurer—J. C. M. Hamilton, Tyrone.

Board of Censors—J. S. Goshorn, W. E. Van Orsdel, G. L. Robb, C. S. Beck, A. Boice.

Board of Examiners—J. C. Green, and W. E. Magill, re-elected.

Next place of meeting, Glen Summit, Luzerne Co., with Pittsburg as an alternate, if suitable arrangements at Glen Summit cannot be made.

(TO BE CONTINUED.)

SOUTHERN DENTAL ASSOCIATION.

EIGHTEENTH ANNUAL MEETING, HELD AT NASHVILLE, TENN.,
JULY 27, 28, 29 AND 30, 1886.

REPORTED FOR THE INDEPENDENT PRACTITIONER BY "MRS. M. W. J."

(Concluded from page 505.)

Dr. B. H. Teague read a paper entitled

THE PERSONAL HYGIENE OF THE DENTIST.

He portrayed the health-giving conditions of early practitioners, when itineracy was the rule, and the dentist had the healthy muscular exercise of hand-pressure in operating and the rolling-mill in the laboratory, contrasting it with the present sedentary life of the city dentist. The older generation of dentists are, as a rule, robust, hearty old men, while the younger ones are pale and slender, subject to ailments of stomach, liver, lungs and nerves, the former aggravated by blue pills and liver regulators, the latter by strong cigars; rest sought only on the lounge while reading the journals, and sleep sacrificed to recording incidents or composing articles. The remedy for all this should be outdoor exercise, careful diet, absolute cleanliness and the aid of various appliances, as the arm-

rest, the operating stool, mechanical motors, systematic appointments and short sittings, care of the eyes, and a summer vacation.

This very practical paper was discussed at some length, with widely varying opinions as to what constitutes the best diet and the best light.

Dr. Wm. Crenshaw read a paper entitled

A COMPLETE SYSTEM POSSIBLE IN FILLING TEETH.

His idea of a perfect system was embraced in the exclusive use of the electric mallet, Perry's separators, the rubber dam and cohesive gold for every operation, restoring the correct anatomical form of every tooth, which, if naturally below the ideal, should be cut and trimmed and the surface restored in gold. When material is varied, changed or abandoned with every variation of circumstances, systematic work is impossible. He considered matrices a snare, and hand and automatic mallets risky devices. Only with the electric mallet and cohesive gold can uniformly perfect, systematic work be done.

Dr. Salomon read a paper from Dr. Knapp on

NERVE (PULP?) CANALS.

He considered that the probabilities were largely against success in attempts to save the pulps when once exposed by caries, it being, as a general rule, admitted that exposure of the pulp is soon followed by loss of vitality, the best operators now removing it entirely, filling the canal to the foramen. To facilitate the removal of the pulp the crown may be much cut away and restored by filling, the pulp canal being made funnel-shaped, to facilitate the passage of instruments and the removal of the contents. With the aid of a delicately pointed stick of osier or orange wood, placed at the entrance of the canal and tapped two or three times with the mallet, the pulp is more readily removed than with the barbed broach. The canal can be filled with gold, lead, oxychloride or oxyphosphate of zinc, or gutta-percha dissolved in chloroform, the writer preferring wood trimmed to fit, and dipped in carbolic acid.

These papers were discussed at some length, neither of them finding advocates of the extreme views taken, the general voice being in favor of combining the best methods of the best operators, and selecting the materials and means best adapted to each case as

it presents itself. The members also favored the preservation of the pulp whenever possible.

Dr. E. S. Chisholm read a paper on

HISTOLOGY AND MICROSCOPY.

To understand the etiology of the decay of the human teeth implies the ability to differentiate between physiological and pathological conditions, the microscope giving the proof of ocular demonstration of histological conditions; hence the value of these studies to the dental practitioner. The microscope reveals the presence of bacteria and other organisms, but it cannot demonstrate the part they play in the destruction of the teeth. Demonstration is the witness, reason the judge; the verdict is science.

This paper and subject passed without discussion.

PYORRHOEA ALVEOLARIS.

Dr. R. B. Adair gave an oral explanation of his very successful treatment, not having been able to find a patient on whom to demonstrate the action of his remedies.

He said that surgical treatment, though very essential in its place, would not restore lost tissues; the pockets are still there, and food crammed into them keeps up the irritation and prevents granulation. The second step is to thoroughly protect the parts that have first been thoroughly cleansed from all deposits and debris. Plates and sponge grafts and other devices often fail, but with the following remedies he has been uniformly successful in inducing healthy granulation, and protecting the parts until the lost tissues are replaced, the teeth tightened and the gum restored. He has no failures to record.

The preparations are as follows :

1. Crystals of Iodine are dissolved in enough pure wood creosote to make a saturated solution (which improves with age). This is applied down in the pockets, and all over the suppurating surface, destroying germs and stimulating healthy granulation.

2. A glycerole of tannin is made by packing in a small wide-mouthed bottle as much crystals of tannin as it will hold, adding enough glycerine to dissolve it, making a very thick solution. After the application of the first remedy the surfaces are dried and protected from saliva, and the second remedy applied. The overflow of saliva coming in contact, forms a pellicle which resists fric-

tion, sealing up the pockets and protecting them properly. The patient should be instructed not to disturb this. The next day this should be removed, coming off like the inner skin of an egg-shell, and the applications should be renewed. Healthy granulation takes place, and the pockets fill up with new tissue in a period varying from ten to a hundred days.

Dr. Catching—Vouched for the virtue of Dr. Adair's mode of treatment. He believes there is always caries of the margin of the process, which he trims away thoroughly, treating with sulphuric acid, followed by iodine, or chloride of zinc forty grains to the ounce, which he applies with a sable hair brush, having a labeled brush for each patient.

Dr. G. Chisholm—Uses Dr. Adair's remedies, supplemented with the following mouth-wash :

Crystals Iodine,	3 gr.
Tincture Aconite,	3 drachms.
Myrrh	1 oz.
Tannin,	10 gr.
Gaultheria,	q. s.

Alcohol sufficient to make 3 oz.

He finds it difficult to secure the return of patients regularly, and this keeps the mouth in good condition, preventing the formation of pus between sittings.

Dr. Morgan—Said that any treatment that was not based on a knowledge of the cause of disease was empirical and quackish.

Dr. Crawford—Questioned whether the disease might not have its origin in the cementum, or the pericementum, the latter being the first structure to make outcry. If it depends on constitutional conditions we must go beyond local treatment, which in that case can only be palliative.

Dr. Thackston—Spoke of the pathology of half a century ago, and the teachings of Horace Hayden. This identical disease was as well known then as now, and was called "conjoined suppuration of the gums and alveolar processes." It was considered the local exhibition of constitutional disease. It was then believed that there was no cure for it, the treatment embracing a building up of the whole body, to hold in abeyance the ravages of a disease for which there was no radical cure. The success of modern systems of treatment is far in advance of any they achieved in that day,

especially through surgical treatment in the removal of deposits and debris.

Dr. J. Taft—Condemned the nomenclature of to-day, names which were not appropriate becoming popular or fashionable. The old descriptive names recalled by Dr. Thackston were, perhaps, as good as any.

He spoke in detail of the various stages and phases of the disease, systemic conditions and local irritants, microbes, etc., and the mode of treatment based upon a knowledge of these conditions. Know first what you are aiming at, and what you have to accomplish, and what to overcome, and then select the remedies best adapted to those wants, as the carpenter selects the tool suited to his purpose. Peroxide of hydrogen is a grand agent, preventing decomposition, destroying and eliminating organisms, allowing the surfaces to heal properly.

Dr. Thackston—Spoke of the reddish-brown deposits enveloping the apex of roots of teeth around which the gums are firmly attached; deposits evidently not from the saliva, nor from the gums, but from the blood itself.

Dr. Taft—Thought these deposits extremely rare, unless there had been an alveolar abscess; not ordinary, but extreme cases.

Dr. Rembert—Defined serumal calculus as a product of pus-flow, degenerated plasma thrown out, with calcific precipitation deposited from serum or decomposing blood exuding through the tissues.

Dr. J. J. R. Patrick—Said that chemical analysis had never shown any distinction between sanguinary and salivary calculus, the only difference lying in the mode of deposit; salivary calculus is a secretion, sanguinary calculus a concretion.

Dr. Morgan—Thought the only radical cure for this disease was the removal of the teeth, though if the cementum is entirely removed by scraping, and the root made perfectly smooth and polished, the gums heal up. The trouble, therefore, possibly lies in the cementum, or the periosteum, except where hereditary. In the latter case, if taken in hand early, in young children, the application of cotton saturated with carbolic acid or iodine, will, with the aid of constitutional treatment, sometimes relieve the ichorous discharge.

The dark deposits are the results of the decomposition of the tissues of the blood. Lime-salts are carried in the blood, and in the

breaking up of the blood tissues the lime-salts have to be disposed of, and they crystallize about the roots of the tooth. In his experience of forty years he had not seen more than half a dozen cases where there was necrosed alveolar process. The bone is softened, the lime-salts being dissolved and carried off in the general circulation, but this is a physiological process, and never takes place with dead tissues. The surgical operation of removing deposits and debris should be thorough at the first sitting, when the soft tissues are broken up and blood poured out, forming a fibrous coagulum which should not be disturbed. The pockets fill up, but the tissue formed is of the nature of scar tissue or cartilage, holding the teeth firmly in place, but the periosteum is never reproduced. Robinson's remedy is very valuable for stimulating granulation, and diet is an important ally in the treatment.

Dr. J. H. Moore—Said that his observations led him to the conclusion that pyorrhœa was always connected with catarrh, particularly that form in which there are no deposits on the roots of the teeth, but deep pockets formed, with exudations of pus, and all the other symptoms of the disease.

FRIDAY MORNING SESSION.

Drs. Thackston, J. Hall Moore, and G. H. Winkler were appointed a committee to investigate resolutions of impeachment, or charges of ungentlemanly and unprofessional conduct, brought against a member of the Association.

A committee was also appointed to draft resolutions on the death of Drs. Holmes, Best, Jobson and Redman.

Resolutions of thanks were passed to the officers of Watkins' Institute, the faculty of Vanderbilt University, the Y. M. C. A., the Tennessee Historical Society, and the Nashville Art Association.

As the report of the Committee on Chemistry, Dr. Theo. Johnston, read a paper entitled

GOLD—COHESIVE AND NON-COHESIVE.

He thought the principles of chemistry involved in the preparation of gold for dental purposes should be taught in every dental college. If we understood clearly why our gold is or is not cohesive, we should have less trouble in handling it. He considered the term "cohesive," as used by the practitioner, a misnomer, the pieces

of gold in a filling being really welded. He reviewed in detail the great variety of properties possessed by gold, in which it surpasses all other metals; defined the principles of chemistry involved in the preparation of gold for the dentists' uses, claiming that absolute purity was essential for welding.

This latter point was not agreed to in the discussion which followed, Abbey's gold being admittedly alloyed with six per cent. silver, as pointed out by Dr. Morgan. Dr. Salomon showed that the addition of platinum to the extent of three per cent. to six per cent. does not prevent it from being very cohesive and easily worked.

The question of the union of gold and platinum being raised, Dr. Winkler said that if molten gold is stirred with a platinum wire, molecules of the latter float off, and being smaller than the molecules of gold, flow in between the latter, the two metals being thus mixed in cooling. Platinum-gold is of beautiful color for front fillings, being scarcely perceptible, even though one-third of an incisor be built down with it.

At the request of Dr. Crenshaw, the interrupted discussion of Operative Dentistry was resumed, that he might reply to criticisms of his paper.

The discussion was continued by Drs. Beech, Winkler, McKellops, Staples, Marshall, Freeman, Louis Chisholm and Crenshaw.

Dr. Catching related a well-authenticated case of remarkable tooth development. A child, born in 1871, began teething at the age of six months, erupting a full set of very small teeth, which were all shed within three months. At the age of eleven months she began teething again, and at the age of fifteen months had a second full set. These also soon crumbled away like chalk. When two years and a half old she weighed ten pounds, and had a third set of teeth. Suffering much from them, they were all extracted before she was four years old, but at seven years of age she had four front teeth of the fourth set. These were mere shells, and were picked off from the gum with the finger nails.

She began cutting a fifth set of teeth at the age of eleven, which she still retains, being now fifteen years of age. She is now a stout, healthy girl, budding into young womanhood; is a resident of Atlanta, Ga., and a patient of Dr. Catching.

Old Point Comfort, Va., was selected as the next place of meeting, and the following officers elected:

President—Dr. W. H. H. Thackston, Farmville, Va.

First Vice-President—Dr. B. H. Catching, Atlanta, Ga.

Second Vice-President—Dr. J. R. Knapp, New Orleans, La.

Third Vice-President—Dr. W. H. Richards, Knoxville, Tenn.

Recording Secretary—Dr. L. B. Dotterer, ——— S. Carolina.

Corresponding Secretary—Dr. J. I. Crawford, Nashville, Tenn.

Treasurer—Dr. H. A. Lowrance, Athens, Ga.

After the installation of the officers elect, the Association adjourned to meet on Monday, at the office of Dr. Morgan, for clinics, after which the Society adjourned finally.

The selection of the time of meeting was left to the Executive Committee, to be announced in due time.

THE HERBST CLINICS IN AMERICA.

REPORTED EXPRESSLY FOR THE INDEPENDENT PRACTITIONER.

(Continued from page 519.)

CLINIC GIVEN ON WEDNESDAY, JULY 7TH, AT THE NEW YORK COLLEGE OF DENTISTRY.

Dr. Herbst filled for Mr. J. R. De Silva, of South America, a student of the above named college, the labial surface cavity of the right upper canine, in six minutes, with Wolrab gold cylinders. The ring clamp was applied to hold the rubber dam above the cavity. He also filled for the same patient the mesial surface of a right upper lateral in ten minutes and a half, using the same gold. For purposes of demonstration he constructed a shellac matrix in the following manner. A piece of shellac about the size of a pigeon's egg was heated over an alcohol lamp to the consistency of putty, and after the rubber dam had been applied it was pressed behind the lingual surface, and a little over the cutting edges of the six front teeth. After removal, pieces of steel spring were heated and inserted in such position that they would rest between the centrals and laterals. The whole of the matrix was then replaced in the mouth, to insure the proper fitting of the steel spring between the approximate surfaces of the lateral and central teeth. When such a matrix is to be used it should be made previous to excavating, that the shellac may not be pressed into the cavity. If, however, the open-

ing is so large that the shellac finds entrance, it may be trimmed away with a cold excavator. Great care should be exercised that the piece of steel which has been pushed between the approximate surfaces of the teeth is free from adhering shellac. If this be not the case, the burnisher may incorporate some of the shellac into the gold, and hence the next layer will not be easily adjusted. For the same reason, the first layer of gold introduced into the cavity should be sufficiently large to cover the shellac entirely.

CLINIC GIVEN JULY 7TH, AT THREE P. M., AT THE DEPOT OF
THE S. S. WHITE DENTAL MANUFACTURING COMPANY.

Dr. Herbst filled for Mr. J. R. DeSilva, of South America, the mesial surface of the left upper canine, with Wolrab's gold cylinders, in five minutes. He also filled the right upper central incisor, mesial surface, in eleven and a half minutes, and the left upper central incisor, mesial surface, in four and a half minutes, using in all of these operations steel instruments in the dental engine. The matrices used for these fillings were made out of a piece of steel spring about eight or ten inches long, and one quarter of an inch in width, and of the thickness of about No. 30 plate gauge, which was pressed between the teeth. That it might be firmly held in position, he inserted it into a piece of shellac, which had been previously softened over an alcohol flame, and while in a soft condition this was pressed into position against the lingual surface of the incisor teeth, allowing a little of the shellac to extend over the cutting edge.

He also filled for Dr. Bödecker a right upper central incisor, the cavity involving about two-thirds of the entire labial surface of the tooth, the enamel of which had been removed by chemical abrasion. The cavity, which was very shallow, was prepared by cutting a fine groove around the border, while the center was left, as it was found perfectly polished. As the abraded surface was very sensitive, the Herbst obtundent was employed with success. The introduction of the gold required about twenty-three minutes. The attendance at this clinic numbered about seventy.

CLINIC GIVEN THURSDAY, JULY 8TH, 8.30, AT THE OFFICE OF
DR. WM. CARR.

There were present Drs. Wm. Carr, J. C. Neisley, C. E. Francis, J. R. De Silva, R. Schreiter and C. F. W. Bödecker. Dr. Herbst

filled for a private patient of Dr. Carr the right lower second bicuspid, the cavity occupying the distal mesial and grinding surface. The gold was introduced in twenty-five minutes. The cavity of this bicuspid was very large, and as the distal cavity extended somewhat under the edge of the gum, a little tin foil was inserted in this place, which was followed by Wolrab's gold cylinders. Every layer of gold was examined very carefully by the gentlemen present, and pronounced to be perfectly consolidated.

CLINIC GIVEN THE SAME DAY AT 1.30 P. M. AT THE NEW YORK COLLEGE OF DENTISTRY.

Dr. Herbst made and explained several of the preparations in his cabinet, such as making a plain tooth into a gum tooth, and enameling the face of a plain tooth to obtain another color, fastening regulating plates, and repairing a rubber set with celluloid in a few minutes, all of which have been previously described.

CLINIC GIVEN THURSDAY, JULY 8TH, AT THE ROOMS OF THE S. S. WHITE DENTAL MANUFACTURING COMPANY, CORNER OF NINTH STREET AND BROADWAY, UNDER THE AUSPICES OF THE FIRST DISTRICT DENTAL SOCIETY.

Dr. E. P. Brown was present and filled for Dr. C. F. W. Bödecker the other central incisor, the labial cavity of which in size exactly corresponded to the one filled by Dr. Herbst in the same mouth the day previous. Dr. Brown filled this cavity in twenty-five minutes, using No. 40 gold and the electro-magnetic mallet, which was adjusted in such manner as to give the very hardest blow that can be obtained by this instrument, using an extra battery for the purpose, as Dr. Brown said that he did not wish to be any longer in operating than Dr. Herbst had been on the previous day. After completion, the surfaces of both were entirely smooth and the edges perfect in every respect, but the difference in sensation experienced by the patient during the introduction of the gold was very great. Every person who has experienced both methods of filling will declare a preference for the Herbst method.

Dr. Herbst, at the same clinic, filled for Dr. Chas. Degenhardt the right upper first molar, and the right upper second bicuspid. The cavities in these teeth faced each other, the one in the molar being in the mesial and grinding surfaces, and that in the bicuspid

occupying the distal and grinding surfaces. The two cavities were large, and if filled with the mallet, would have occupied at least one and a half or two hours. Dr. Herbst introduced the gold in those two cavities in twenty minutes, to the satisfaction of every one present at the clinic. Every layer of gold was examined for hardness and adaptation to the walls, and when the last layers were in place, even Dr. Brown pronounced the fillings to be exceedingly hard and perfect. About sixty-five persons were present at this clinic.

CLINIC GIVEN JULY 9TH, AT THE OFFICE OF DR. WM. CARR.

There were present Drs. Wm. Carr, J. C. Neisley, Williams, Schreiter, C. E. Francis and C. F. W. Bödecker. Dr. Herbst filled for the same patient who occupied the chair the day previously, the left lower second bicuspid, in the distal and grinding surface. The excavation had been done the previous day. The operator made a matrix of German silver around the bicuspid, as well as the first lower molar on the right side of the mouth. The rubber dam was adjusted and the tooth filled with Wolrab gold cylinders No. 0, using No. 10 foil upon its grinding surface; the time occupied during the introduction was about twenty minutes. The patient thanked Dr. Herbst for his inventions, declaring that the introduction of the gold by this method gave him no pain whatever.

In the evening, Dr. Carr showed Dr. Herbst a filling in the same mouth which he had completed entirely by the Herbst method during the day. It was a left lower first molar tooth, around which Dr. Herbst had made the matrix. All the teeth which had been filled for this patient were divitalized and somewhat sensitive to percussion, but no pain was experienced during the introduction of the gold.

The filling inserted by Dr. Carr was very nicely made, and presented a beautifully finished and smooth appearance.

CLINIC GIVEN JULY 9TH, 1.30 P. M., AT THE NEW YORK
COLLEGE OF DENTISTRY.

Dr. Herbst exhibited before the students the making of diamond drills, engine wheel brushes, red gum enamel, appliances for re-planting teeth, making of gold nerve broaches and the general application of matrices, all of which have been previously explained.

CLINIC GIVEN FRIDAY, JULY 9TH, AT 3 O'CLOCK, AT THE ROOMS
OF THE S. S. WHITE DENTAL MANUFACTURING COMPANY,
UNDER THE AUSPICES OF THE FIRST DISTRICT
DENTAL SOCIETY.

Dr. Herbst filled for Dr. Tennison, of New York, the right upper first molar and right upper second bicuspid, the cavities facing each other. The defect in the first bicuspid was exceedingly great; so much so that when excavated the lingual portion of the enamel only remained. All the rest of the dentine was gone, thus leaving an exceedingly thin and delicate wall, through which the point of an instrument was visible before the filling was commenced. Dr. Herbst expressed his great satisfaction at the opportunity afforded him, as he thought he would be able to fill this tooth without fracturing the enamel, which showed deep cracks in several places of the lingual as well as the buccal surface. Before the excavation was commenced he placed the usual German silver ring matrix around both teeth. They were then excavated, the rubber dam applied and the gold inserted. At the cervical border of each cavity a little tin foil was placed, both for the protection of the pulps and to prevent secondary decay. The tin was carefully burnished over the pulp, which was very nearly exposed, and then followed by Wolrab's gold cylinders, No. 0. Dr. Herbst filled both cavities at the same time, alternately adding a layer in each cavity until both were nearly filled, when, unfortunately, a little piece of the lingual wall of the right upper first bicuspid gave away, and had to be repaired with gold without smoothing the rugged edges of the broken enamel. When completed, both fillings were pronounced perfect by every one present.

CLINIC GIVEN SATURDAY, JULY 10TH, AT THE OFFICE OF
DR. C. F. W. BÖDECKER.

Dr. Herbst filled the right and left upper central incisors, mesial cavities, for a private patient, each occupying about six minutes' time. The matrix used was the ordinary steel spring about eight inches in length, with a piece of shellac fastened at one end. At this clinic there were present Drs. W. H. Atkinson, W. Atkinson, Schreiter and C. F. W. Bödecker.

CLINIC GIVEN JULY 12TH, AT THE OFFICE OF DR. S. H. GUILFORD, WALNUT STREET, PHILADELPHIA.

Dr. Herbst filled for Dr. Tennison, of New York, the right lower first molar, the cavity involving the grinding and buccal surface, the operation requiring eleven minutes for the introduction of the gold. He also described the different methods of making his matrices. At the same time Dr. Bödecker exhibited the former described little inventions of Drs. Herbst, Berggren and Foerberg. Those present at the meeting, were Drs. E. Bedloe, E. T. Darby, F. M. Dixon, F. D. Gardiner, S. H. Guilford, R. Huey, W. F. Litch, D. N. McQuillen, J. W. Noble, C. N. Pierce, E. R. Pettit, C. E. Pike, H. C. Register, H. M. Sheppard, Jas. Truman, J. N. Woodward, J. R. Yorks, of Philadelphia; J. R. Wood, Camden, N. J.; C. R. Jefferies, Wilmington, Del.; S. B. Luckie, Chester, Pa.; and Drs. R. Schreiter and C. F. W. Bödecker.

CLINIC GIVEN JULY 13TH, 9 A. M., AT THE OFFICE OF DR. S. H. GUILFORD, PHILADELPHIA.

Dr. Herbst filled a very large labial surface of a tooth made out of hippopotamus ivory. The filling was about three-quarters of an inch in length and three-eighths of an inch in breadth. The cavity into which the gold was burnished was a perfectly flat and polished surface, with no undercuts, except a little groove which was cut all around the edge of this tooth. The gentlemen present declared it to be an impossibility to fill it in any other manner with which they were acquainted. Dr. Herbst laid about ten Wolrab cylinders upon the surface, and compressed them by means of an engine burnisher and a piece of cotton. When this was partially condensed the first layer was condensed by means of agate points and the dental engine. Layer after layer was added until the contour was completed, when it was finished with corundum and rubber discs. Before it was quite completed, Dr. Herbst, while trying the resistance of the filling, took the whole of it out of the ivory tooth. All the gentlemen present agreed that the anchorage in the ivory had not been sufficient to securely hold the gold. Dr. Herbst then made a little deeper undercut around the edge of the ivory, and filled the same cavity again, occupying about thirty-five minutes' time. The operation was performed in about the same manner as the pre-

vious one, but when done the gold could not be dislodged from the ivory, and presented a beautiful and solid appearance. The gentlemen present were Drs. J. W. Noble, F. D. Gardiner, C. N. Pierce, E. T. Darby, S. H. Guilford, R. Schreiter, and C. F. W. Bödecker.

CLINIC GIVEN JULY 13TH, AT THE OFFICE OF DR. W. G. A. BONWILL, LOCUST STREET, PHILADELPHIA, AT 4 P. M.

In the chair was a patient employed by the S. S. White Dental Manufacturing Company, for whom Dr. Herbst filled a right upper central in the distal surface, and a right upper lateral in the mesial surface. After this, Dr. Herbst again explained the different methods of applying shellac matrices combined with steel springs. Dr. Bonwill at this clinic presented a gentleman for whom he had filled a right upper first molar in the mesial and grinding surface, and a right upper second bicuspid in the distal and grinding surface. Both of these fillings were inserted in less than one hour's time. The cavities in the teeth were very large, the contours had been beautifully restored, and the edges were perfect in every respect. The gentlemen present at this clinic were Drs. D. Neale, W. H. Neale, E. C. Kirk, F. M. Dixon, D. N. McQuillen, J. W. Noble, W. G. A. Bonwill, C. A. Kingsbury, J. A. Woodward, Jas. Truman, W. H. Trueman, A. Tees, F. D. Gardiner, C. N. Pierce, E. R. Pettit, S. H. Guilford, C. J. Essig, R. Schreiter, C. F. W. Bödecker.

DINNER TO DR. HERBST.

On the evening of July 13th, the dentists of Philadelphia honored Dr. W. Herbst with a grand dinner at Hotel Bellevue. The gentlemen present at this occasion were Drs. E. Bedloe, W. G. A. Bonwill, E. T. Darby, F. M. Dixon, C. J. Essig, F. D. Gardiner, J. E. Garretson, S. H. Guilford, R. Huey, Louis Jack, C. A. Kingsbury, E. C. Kirk, W. F. Litch, D. N. McQuillen, D. Neall, J. W. Noble, C. N. Pierce, E. R. Pettit, C. E. Pike, H. C. Register, H. M. Sheppard, Ambler Tees, J. D. Thomas, W. H. Trueman, James Truman, J. W. White, J. A. Woodward, J. R. Yorke, C. A. Timme, R. Schreiter, C. F. W. Bödecker, Mr. F. N. Johnson, Oliver Lund and Gideon Sibley.

CLINIC GIVEN JULY 14TH AT THE ROOMS OF THE S. S. WHITE
DENTAL MANUFACTURING COMPANY, 315 FULTON ST.,
BROOKLYN, UNDER THE AUSPICES OF THE
BROOKLYN DENTAL SOCIETY.

Dr. Herbst filled for Dr. L. G. Wilder, of Brooklyn, the right upper first bicuspid, the cavity involving the distal and grinding surfaces. It was filled with Wolrab gold cylinders, but in the last layer Dr. Herbst made use of No. 10 Wolrab foil, dividing the sheet into eight strips and rolling it up into rope form. He also filled for the same patient the right upper central in the distal surface. He used the ordinary steel spring matrix in this cavity, on which he fastened a piece of previously softened shellac, which was pressed upon the lingual surface and a little over the cutting edges of the front teeth, to prevent the steel spring from moving up or down. The filling of this cavity only required about four minutes of time, after which he explained various other methods of applying matrices, principally those made of shellac and German silver.

Dr. J. P. Geran, of No. 65 Green Avenue, Brooklyn, who had attended one of the clinics given by Dr. Herbst in New York, introduced a patient with a very large filling in the mesial and grinding surface of the right upper first molar tooth. This filling had been made by Dr. Geran three days before, entirely by the rotation method. It was very beautifully executed, the surface being hard and polished and the edges perfect. Dr. Geran, after exhibiting his patient, expressed his gratitude to Dr. Herbst for his inventions, at the same time mentioning that for the last three days he had filled teeth, using no other but the Herbst method, and that the patients for whom he operated were unwilling to again submit to the process of malleting. The President, Dr. Wm. Johnson, as well as many other members of the Brooklyn Dental Society, expressed sincere thanks and gratitude to Dr. Herbst for his inventions.

CLINIC GIVEN JULY 17TH AT THE OFFICE OF DR. C. F. W.
BÖDECKER.

Dr. Herbst filled for Mrs. H., a private patient of Dr. Bödecker, the right lower first bicuspid, the cavity involving the distal and grinding surface. Before excavating he made, as usual, a matrix of German silver in the manner before described, which, after the excavation had been completed and the rubber dam applied, was

again put on and the filling commenced. At the cervical wall of this cavity a thin layer of tin was placed. This was followed by Wolrab's gold cylinders compressed in the usual manner. The cavity involved the distal grinding and a part of the buccal cusp of the tooth, and was of very large size. It was filled in one hour and three minutes. The gentlemen present at this meeting were Drs. W. H. Atkinson, W. Atkinson and C. F. W. Bödecker.

CLINIC GIVEN AT THE MEETING OF THE JERSEY STATE DENTAL SOCIETY, HELD AT ASBURY PARK JULY 22D.

Dr. Herbst filled for Dr. F. H. Batterman the left lower lateral, the cavity occupying the mesial surface, and the right lower lateral on the lingual, distal and labial surfaces, with Wolrab's gold cylinders, using a little of No. 10 foil only in the last layer. He then filled for another patient a left upper canine, involving the mesial and cutting edge. The cavity was very large and the pulp nearly exposed.

Previous to excavating the cavity, the German silver matrix was prepared and explained, and as the cervical portion of the cavity extended very far under the gum, and was exceedingly painful to excavation, the obtundent, made of sulphuric acid saturated with cocaine, and this saturated with sulphuric ether, was made use of with success. After excavating the cavity, the dam was applied, the matrix readjusted and the cavity filled. Previous to the first layer of gold a little tin was burnished upon the cervical portion of the cavity, as well as over the pulp chamber, as the cavity was very sensitive to thermal changes. After the layer of tin had been thus introduced it was followed by Wolrab's gold cylinders No. 0, and in the last layers No. 10 foil prepared in the usual way, and with this he contoured the cutting edge of the eye tooth. At the same clinic Dr. W. G. A. Bonwill filled a right upper second bicuspid in the distal and grinding surface, and a right upper first molar in the mesial and grinding surface, for the purpose of giving Dr. Herbst a chance to witness an operation performed by an American operator.

The teeth were filled with Abbey's No. 10 soft gold foil, which was annealed previous to introduction. Dr. Bonwill completed these two very large operations in about an hour. The operations, when completed, showed great skill, and were highly appreciated by every one present, including Dr. Herbst.

(TO BE CONTINUED.)

Editorial.

THE HERBST METHODS.

We are in receipt of a number of letters asking our opinion concerning the Herbst system of filling teeth, and whether, in our opinion, his methods will be generally adopted in this country. Some of the questions are exceedingly difficult ones to answer, but we have no hesitation in giving our impressions.

There is a great deal of good in the Herbst method. Probably no one who has ever visited us from abroad has produced so deep an impression upon professional minds, or has seen such immediate practical results flow from his teachings, as has Wilhelm Herbst. As we said in the August number, this is largely due to certain peculiar circumstances, and to the genuine enthusiasm, the unselfish devotion, as well as to the undoubted genius of Herbst himself. The way, also, had been carefully prepared for him by one in whom the profession of America has great confidence—Dr. Bödecker—who, himself thoroughly convinced of the merits of the Herbst system, in entire disinterestedness devoted his time and money to what he felt was the service, not so much of Dr. Herbst, as of the profession of America. It should be understood that the principal part of the expense of the whole tour has been borne by Dr. Bödecker, and American dentists owe him a debt which they can never repay.

But admitting all this, had the ideas of Herbst been without any practical value, they could not have produced upon professional minds here so deep an impression as they have. There is no question concerning their great utility, and in our mind there is little doubt that Dr. Herbst's visit will permanently modify American dental practice. Not that we are of the opinion that his ways will supersede ours, or that the rotary burnisher will displace the mallet. It would be nonsense to claim this. But the method of condensing gold is not all there is in Herbst's system. There are numberless little inventions and ideas which are peculiar to him, and which form a part of his gift to the dental profession. And a gift it is, for we should not forget that Herbst has never taken out a patent, nor sought in any way to control his devices.

The American dentist who did not witness an operation at the hands of Dr. Herbst has missed one of the opportunities of a life-

time. It is almost impossible to entirely comprehend his methods without witnessing them. He is original in all his ways, and his expedients are endless. Yet from the accounts of his clinics, as reported in the INDEPENDENT PRACTITIONER, a very clear idea of his manipulation of gold may, by careful study, be obtained.

Our advice to every operator is, that he carefully experiment in the Herbst system. Not with the expectation of abandoning the mallet, or any other established system, but that he may have command of a method which presents very many advantages, and which is peculiarly adapted to exigencies which often arise; a method by which results that are often desirable can more easily and perfectly be secured than in any other way, the study of which will certainly tend to give broader views of the possibilities of operative practice, and a knowledge of which will make better operators in the old established way, and assist to a more thorough comprehension of the underlying principles of operative dentistry.

GREEK TERMINATIONS.

We are under obligation to the editor of *The British Journal of Dental Science* for calling attention to a singular editorial mistake in the July number of this journal, concerning the origin of the word "Gastritis." We gave it as from the French, *Gaster*, quite forgetful, for the moment, of "Gasteropod," "Gasteropodous," etc., words with which we certainly are familiar, and which should have suggested the Greek γαστήρ. The article was necessarily written in a hurried manner, while a devotion to other subjects and the lapse of years have largely effaced from memory the result of our early study of the classical languages, and this is our excuse.

We cannot, however, agree with our scholarly contemporary, that it is inadmissible to use the Greek termination *ιτγσ* in combination with words of other origin. The English is a composite language, and the exigencies of professional technicalities demand, at times, the union of a word of one tongue with the termination or prefix of another. Undoubtedly it would be more strictly in accordance with philology if the root and termination were derived from the same source, but this would involve the multiplication of terms and the adoption of a strange word for an already accepted one of the same signification. It would imply the substitution of an English,

or an Anglicized word, by one that is foreign, and thus tend to further corrupt the language. Established custom is the guide in deciding the canons of good English, and this has sanctioned the adding of a Greek termination to a Latin word, as in "Cerebritis," "Tonsillitis," "Cementitis," "Vaginitis," "Conjunctivitis," "Retinitis," "Rectitis," etc. This is the point, and the only point, that we desire to make.

BIBLIOGRAPHICAL.

THE AMERICAN SYSTEM OF DENTISTRY. In treatises by various authors. Edited by WILBUR F. LITCH, M. D., D.D. S., Professor of Prosthetic Dentistry, Therapeutics and Materia Medica, in the Pennsylvania College of Dental Surgery.

Volume I. Regional and Comparative Dental Anatomy; Dental Histology and Dental Pathology. Philadelphia: Lea Brothers & Co. 1886.

This is the first volume of a work that has been in the course of preparation for some time, and concerning which considerable curiosity has been manifested. It consists of a series of papers, the most of them original, but some of which are reprints from dental journals and other sources. The plan pursued is to submit each subject to some one who, in the opinion of the editor, is especially well qualified to speak concerning it, and then to present the papers in the author's own words. This has, in the first volume, given us a series of excellent essays, which contain the results of the latest observations of each writer in the several fields covered by the volume. Whether the final issue will be a complete "system" of dentistry, with a unity of purpose and a harmony in execution that shall entitle it to rank as a standard text-book, is a question which can only be decided when the last volume is before us. It would be manifestly improper to pass judgment upon it as a whole, until it can be examined in its completed state. It is certain, however, that every progressive dentist will wish to add it to his library, for purposes of examination and reference, if for nothing more.

The contents of Vol. I, are as follows :

Regional Anatomy, etc. By M. H. Cryer, M. D., D.D.S.

Lymphatic Vessels of the Head and Neck. By Albert P. Brubaker, A. M., M. D., D.D.S.

The Teeth of the Invertebrates. By W. H. Dall.

The Teeth of the Vertebrates. By Jacob L. Wortman, M. D.

Embryology and Histology. By W. Xavier Sudduth, M. D., D.D.S.

General Pathology. By G. V. Black, M. D., D.D.S.

Dental Caries. Same author.

Pathology of the Dental Pulp. Same author.

Diseases of the Peridental Membrane. Same author.

Abrasion and Erosion of the Teeth. Same author.

Diseases of the Dental Pulps and their Treatment. James Trueman, D.D.S.

Dr. W. D. Miller's series of papers, first published in the *INDEPENDENT PRACTITIONER*, "Fermentation in the Human Mouth," and "Biological Studies of Fungi in the Human Mouth," are republished entire, with the original illustrations given in this journal.

The first volume is a very handsome one of 1,034 octavo pages, profusely illustrated, many of the cuts, however, being reproduced from other authors.

DICTIONARY OF PRACTICAL SURGERY. By various British Hospital Surgeons. Edited by CHRISTOPHER HEATH, F. R. C. S. Philadelphia: J. B. Lippincott Co. 1886.

The name of Prof. Heath is familiar to surgeons in this country—more especially to dental surgeons—from his well-known work on "Injuries and Diseases of the Jaws," the first edition of which was published in 1868, and which has since remained the leading textbook in its special field. The present work is of a more ambitious character, covering the whole of surgery. It is intended as a book of reference for the busy practitioner, who is constantly meeting emergencies in which he desires immediate information as to diagnosis and treatment, and in which there is not time for a study of extended treatises.

The surgical affections are arranged in an alphabetical form, and the subjects are considered as to Cause, Pathology, Symptoms, and Diagnosis, Treatment and Prognosis. Almost every surgical disease or injury that can be conceived of is thoroughly considered, and there are references for allied affections, which enable the examiner readily to compare them with each other. There is also a copious index, which enables the student easily to find any particular article which he may desire to consult.

The book will be indispensable to every dental surgeon, for there are many excellent articles which pertain to his specialty. Prof. Heath himself contributes a number on Diseases of the Jaws, of the Gums, Operations in the Oral Cavity, Dentigerous Cysts, Fractures of the Alveolus, Diseases of the Antrum, etc., etc.

Oakley Coles writes on Mechanical, and Thomas Smith on Surgical treatment of Cleft Palate. J. W. Haward furnishes articles on Parotid Tumors, Salivary Fistulas, etc. W. M. Baker on Diseases of the Tongue, etc. W. W. Cheyne on Inflammation and Antiseptics, etc. Stephen Paget on Cancrum Oris, etc. A. J. Pepper on Diseases of the Lips, and Charles Tomes on Caries of the Teeth, Dentition, Extraction, Teeth as a Test of Age, Tooth-ache, etc. Besides these there are hundreds of other articles of equal value to the surgeon. It will be readily comprehended, then, that this Dictionary of Surgery will fill an important place in the library of every dentist who desires thoroughly to qualify himself for the practice of his whole profession.

It is a handsome octavo volume of nearly 900 pages, and we most unhesitatingly commend it to every dentist as one of the most useful books of reference with which he can provide himself.

MEDICAL AND SURGICAL DIRECTORY OF THE UNITED STATES.
R. L. Polk & Co., 280 Broadway, New York City. 1886.

We cannot give a better idea of the design and scope of this most excellent and useful compendium, than by quoting the list of contents from the title page. It comprises "Lists of Physicians and Surgeons, arranged by States, with School practiced, Post-office address, population and location, date and College of graduation; all the existing and extinct Medical Colleges in the United States and Canada, with Location, Officers, Number of Professors, Lecturers, Demonstrators, etc.; the various Medical Societies, Medical Colleges, Hospitals, Sanitariums, Asylums, and other Medical Institutions, Boards of Health; a Synopsis of the Laws of Registration, and other Laws relating to the Profession in each State; Medical Journals, with names of editors, frequency of publication and subscription rates; Official List of Officers of the Medical Department of the U. S. Army, Navy, and Marine Hospital Service; Roster of Examining Surgeons of the U. S. Pension Department; a descriptive sketch of each State and Territory, embodying such

matters as location, boundaries, extent in miles and acres, latitude and longitude; statistics relating to Climate, Temperature, rate of Mortality, number of deaths from consumption, etc.; the names and location of all the best known Mineral Springs; full particulars of all National Associations and Societies relating to Medicine and Surgery, and a list of all Physicians in the United States, arranged alphabetically, with the number of the page on which the name occurs."

If any one can think of any other information which such a book should contain, it will, without doubt, be found. The whole forms a handsome octavo volume of 1,400 pages, and is a complete encyclopedia of medical statistics and information.

DENTAL SCIENCE. QUESTIONS AND ANSWERS. A compendium of Lectures on Dental Materia Medica, Dental Physiology, Dental Pathology and Therapeutics. By Luman C. Ingersoll, A. M., D. D. S., Dean of the Dental Department of the University of Iowa. L. C. INGERSOLL, Publisher, Keokuk, Iowa.

This excellent work is the result of thirty years of experience at the operating chair, and of long service as a writer and teacher, by one of the most thoughtful, able, and studious dentists of America. There is not a dental society in our land, of any prominence, which does not know Dr. Ingersoll by his writings or speeches, and if there be an intelligent dentist in the profession who has not been assisted by his wise counsels and instructions, it is because he is not acquainted with dental literature. The book contains that which Dr. Ingersoll has spent a life-time in acquiring. It is the result of original investigations, and its every page evidences that its author is a thinking man. It is more comprehensive than the most of works of the kind, and contains a mass of information that is not usually incorporated in them. Its price is but \$2.00, and in buying it the dental reader may rest assured that he will view the truth from another standpoint than that which is taken by the conventional writer. We advise every student to get it by all means, and then carefully to study it.

EPITOME OF DISEASES OF THE SKIN. By LOUIS A. DUHRING, M. D. Philadelphia: J. B. Lippincott Co. 1886.

This little volume is an abstract of a course of lectures delivered in the University of Pennsylvania, during the sessions of '83 and

'84. They were admirably reported by Henry Wile, M. D., in abstract, for the *Medical News*, and are now revised and published in book form, and make a very useful and convenient handbook of the subject.

TRANSACTIONS OF THE NEW YORK ODONTOLOGICAL SOCIETY FOR 1885. Philadelphia: The S. S. White Dental Manufacturing Co. 1886.

We have before spoken in commendation of the volumes of the proceedings of this excellent society. The present forms another quite as handsome and of equal interest with its predecessors.

TRANSACTIONS OF THE ILLINOIS STATE DENTAL SOCIETY FOR 1886. Chicago: H. D. JUSTI.

Of all the many dental societies in the United States, there are few that obtain from their own members so much of strictly original matter as does the Illinois State. The present volume comprises some of the best papers that have issued from the same source, and while there are many things contained within it to which not every intelligent man will give his assent, there is nothing the perusal of which will not do him good.

REPORT OF THE SECOND ANNUAL MEETING, ALUMNI ASSOCIATION OF THE CHICAGO COLLEGE OF DENTAL SURGERY.

There were many capital hits in some of the addresses made upon this occasion, and if we had the space we would like to make some extracts from the responses of Dr. E. E. Cady and Dr. J. D. Moody.

THE NEUROLOGICAL REVIEW. Edited by J. S. JEWELL, M. D. Monthly. Rand, McNally & Co., publishers, Chicago.

This is a new journal devoted to Neurological Science, which has already taken a high position in professional literature, and gives promise of great usefulness. We most cordially welcome it to our exchange list, and hope that its success will be commensurate with its merits, in which case its publishers will have little cause for regrets.

DIET TABLES. New York: Reed & Carnrick.

This is a capital little hand and reference book, giving in most convenient form the dietary most appropriate in some of the more

common diseases, like diabetes, dysentery, phthisis, etc. It also tells what should be avoided. Any one can readily see the great advantages in the possession of such a work. The leaves are perforated for tearing out and marking for the guidance of each patient.

The Treatment and Filling of Root Canals at a Single Sitting. By C. T. STOCKWELL, D. D. S., Springfield, Mass.; also *A Method of Saving Badly Broken Soft Teeth.* By the same author.

Dr. Stockwell is a vigorous writer, and in these papers read before the Vermont State Dental Society, he is at his best. While we cannot agree with him in all his statements or deductions, we have read the papers with much pleasure and profit. We like an author who gives some opportunity for debate, and who does not follow the beaten track of conventional treatment.

Some Recent Experiences in Clinical Surgery. By DONALD MACLEAN, M. D. Reprint from the Transactions of the Mich. State Medical Society.

Esthetics of Medicine. By H. A. COTTELL, M. D. Reprint from the *American Practitioner and News.*

Electrolysis in Gynecology. With reports of cases and discussions. By FRANKLIN H. MARTIN, M. D. Reprint from the *Jour. Am. Med. Association.*

Address in Dental and Oral Surgery. By JOHN S. MARSHALL, M. D., Chicago. Reprint from the *Jour. Am. Med. Association.*

The Progressive and Retrogressive Physiological Metamorphosis of the Jaws and Teeth. By DR. JOHN J. R. PATRICK, Belleville, Ill. Reprint from the *Dental Cosmos.*

Dental Spiritualism. By DR. LOUIS OTTOFY, Chicago, Ill. Reprint from the Illinois State Dental Society Transactions.

Intubation of the Larynx for Diphtheritic Croup. By E. FLETCHER INGALLS, A. M., M. D. Reprint from the *Jour. Am. Med. Association.*

First Annual Report of the Board of Dental Examiners of Kansas.

The Limitation of the Gangrenous Stage of Syphilis. By F. N. OTIS, M. D. Reprint from *Jour. Cutaneous and Venereal Diseases*.

Report of Committee on Dental Science and Literature. By DR. C. R. E. KOCH, Chicago. Reprint from the Transactions of the Illinois State Dental Society.

The Legal Status of Medical Practitioners. By ANSLEY WILCOX. Reprint from the *Medical Press*.

Souvenir of the New York Odontological Society. 1886.

Annual Address before the Massachusetts Dental Society. By D. B. INGALLS, D. D. S.

Homœopathy as Viewed by a Member of the Massachusetts Medical Society. By VINCENT G. BOWDITCH, A. B., M. D. Reprint from the *Boston Med. and Surg. Journal*.

Enucleation with Transplantation and Reimplantation of Eyes. By CHARLES H. MAY, M. D. Reprint from the *Medical Record*.

Current News and Opinion.

MEMORIZING DOSES.

Dr. G. A. Wiggins, of Philadelphia (*Med. World*, August, 1886), gives some general rules, with their exceptions, which are thoroughly reliable:

I. The dose of all infusions is 1 to 2 ozs., except infusion of digitalis, which is 2 to 4 drs.

II. Dose of all poisonous tinctures is 5 to 20 minims, except tincture of aconite, which is 1 to 5.

III. Dose of all wines is from 1-2 to 1 fl. dr., except wine of opium, which is 5 to 15 minims.

IV. Of all poisonous solid extracts you can give 1-2 gr., except extract of calabar bean, which is 1-16 to 1-4 gr.

V. Dose of all dilute acids is from 5 to 20 minims, except dilute hydrocyanic acid, which is 2 to 8 minims.

VI. Dose of all aquæ is from 1 to 2 ozs., except aqua laurocerasus and aqua ammonia, which are 10 to 30 minims.

VII. Of all syrups you can give 1 drachm.

VIII. Dose of all mixtures is from 1-2 to 1 fl. oz.

IX. Dose of all spirits is from 1-2 to 1 fl. dr.

X. Dose of all essential oils is from 1 to 5 minims.

—*Medical and Surgical Reporter.*

NEW ENGLAND DENTAL SOCIETY.

The twenty-fourth annual meeting of the New England Dental Society will be held at the office of the S. S. White Dental Manufacturing Co., No. 160 Tremont Street, Boston, Mass., on Thursday and Friday, Oct. 7th and 8th, beginning on the first day at 10 o'clock, A. M.

The annual address will be by Dr. Norman W. Kingsley, of New York.

Some of the papers and essays to be read at the meeting are :

Our Patients as We Find Them. By Dr. George O. Tuck, Gloucester, Mass.

Christian Science, or Metaphysical Treatment in Dentistry. By Dr. Edward N. Harris, Boston.

Essay. By Dr. Edward S. Niles, Boston.

Reminiscences and Observations. By Dr. Sullivan L. Ward, Lowell, Mass.

The International Medical Congress and the relation of the Dental Profession thereto. By Dr. A. M. Dudley, Salem, Mass.

Subjects for discussion will be :

Successes and Failures in the use of Local Anæsthetics.

Simple Methods for Regulating Teeth.

Treatment of Chronic Alveolar Abscess.

All respectable members of the profession are invited to attend. An effort will be made to secure free return tickets over all railroads.

A. M. DUDLEY, Sec'y.

“A DENTIST SHOULD HAVE CLEAN, WHITE HANDS.”

The following hints will be found of service in accomplishing the desired end : A little ammonia or borax added to the water you wash your hands with, and that water just lukewarm, will keep the skin clean and soft. A little oatmeal mixed with the water will whiten the hands. Many people use glycerine on their hands when they go to bed, wearing gloves to keep the bedding clean; but glycerine does not agree with every one. It makes the skin hard and red. These people should rub their hands with dry oatmeal and wear gloves in bed. The best preparation for the hands at night is white of egg with a grain of alum dissolved in it. White of egg, barley flour and honey, is a good application, but not better than oatmeal. The roughest and hardest hands can be made soft and white in a month's time by doctoring them a little at bed-time, and all that is required is a nail-brush, a bottle of ammonia, a box of powdered borax, and a little fine white sand to rub the stains off, or a cut of lemon, which will do even better, for the acid of the lemon will clean anything.

INCISOR TOOTH IN ORBIT.

Dr. Ward Cousins recently showed to an English Medical Society an incisor tooth removed from the orbit of a child two years of age. It was perfect in outline and structure. Mr. Tracy did not regard it as the product of a dentigerous cyst, but as a specimen of a displaced tooth during an early stage of development.

THE AMERICAN DENTAL SOCIETY OF EUROPE.

The meeting for 1886 was very well attended, and some good papers were read, which will appear in due time in this journal.

Dr. Miller was, by unanimous vote, authorized to draw upon the treasurer for all available funds (which amounts to about 1200 m.), for the expenses of his experiments in physiology and pathology.

This society believes in putting its money where it will do the most good. It will be remembered that three years ago it paid 800 m. for a microscope to be used by its members who are microscopists, and two years ago it sent 400 m. to the widow of Marshall H. Webb. The members assess themselves freely, and then each year use all the money for promoting scientific investigation. Our American professional brethren in Europe seem to be making quite as good progress as their *confreres* at home.

The following is the list of officers elected for the ensuing year :

President—Dr. E. P. George.

Vice-President—Dr. C. T. Terry.

Secretary—Dr. E. A. Galbraith.

Treasurer—Dr. Wm. Sachs.

MINNESOTA.

The third annual meeting of the Minnesota State Dental Association was held at the State Capitol, St. Paul, commencing July 21st and continuing three days. The next meeting will be in Minneapolis, the second Wednesday in July, 1887.

The officers for the ensuing year are :

President—Dr. C. M. Bailey, Minneapolis.

Vice-President—Dr. H. L. Cruttenden, Northfield.

Recording Secretary—Dr. D. W. Edwards, Le Seur.

Corresponding Secretary—Dr. L. C. Gould, St. Paul.

Treasurer—Dr. Reid, Minneapolis.

M. G. JENISON, Sec'y.

TO DENTISTS.

The undersigned is desirous of obtaining, at as early a day as possible, all Bills, Charters, Statutes, Statistical Records, Books, Pamphlets or Documents, relating directly or indirectly to Dental Education, Examination and Qualification. The receipt of any of the above will be acknowledged with thanks, and postage and other expenses paid.

FRANK ABBOTT, M. D.,

22 West 40th Street, New York.

OHIO STATE DENTAL SOCIETY.

The second annual meeting of the Ohio State Dental Society (reorganized) will be held in Toledo, Ohio, beginning on Tuesday, Oct. 26th, at 10 A. M.

J. R. CALLAHAN, Sec.

UNION MEETING. FIFTH, SIXTH, SEVENTH AND EIGHTH DISTRICT DENTAL SOCIETIES OF NEW YORK.

There will be held in Rochester, N. Y., on Oct. 26th and 27th, a joint convention of the Fifth, Sixth, Seventh and Eighth District Dental Societies of the State of New York. This includes one-half the districts of the State. Prominent members of the profession will be present; clinics will be given, and papers on practical subjects will be read and discussed. Members of the profession are invited to be present. Those who attend will improve a rare opportunity, while those who stay away will have much to regret. Note the date in your appointment book, and be prepared to come.

CHAS. T. HOWARD, Rec. Sec'y 7th District.

FIFTH DISTRICT DENTAL SOCIETY.

The Fifth District Dental Society will hold its eighteenth semi-annual meeting at Syracuse, Monday, Oct. 25, 1886. The sessions will be held at the Vanderbilt House. Visiting dentists will be cordially welcomed.

C. J. PETERS, Rec. Sec.

THE MUMMY OF RAMESES II, of Egypt, the Sesostris of the Greeks, and the Pharaoh of the Bible, under whose reign the exodus of the Jews occurred, has lately been unrolled at Boulac, a suburb of Cairo, in Egypt, in the presence of the Khedive, the director general of the excavations and antiquities in Egypt, and other high dignitaries and learned men from all countries. It was discovered in the subterraneous hiding place at Dayrel-Bahari, and its identity was fully established by the ancient inscriptions.

Rameses ruled in Egypt more than 3,200 years ago. His reign was a very long one—67 years—and he must have been nearly 100 years of age at the time of his death. He was an exceedingly warlike potentate, and conquered a number of countries. He also built some of the most enduring of the wonderful Egyptian monuments of skill and labor, and ranks as one of the greatest monarchs who ever sat upon the throne.

The head was found to be long, and small in proportion to the body. The top of the skull was quite bare. On the temples there were a few sparse hairs, but at the poll the hair was quite thick, forming smooth, straight locks, about five centimetres in length. White at the time of death, they had been dyed a light yellow by the spices used in embalming. The forehead was low and narrow, the superciliary ridge prominent, the eyebrows thick and white, the eyes small and close together, the nose long, thin, and hooked. The temples were sunken, the cheek bones very prominent, the ears round, standing far out from the head and pierced for the receiving of earrings. The jawbones were massive and strong, and the chin prominent, the mouth small but thick-lipped, and filled with some kind of a black paste. On clearing this away a set of white and well-preserved teeth came in view, which were much worn and very brittle. The moustache and beard were thin, and seem to have been kept shorn during life.

HOW MANY of the readers of this journal have tried the different preparations of Parke, Davis & Co., advertised upon the fourth cover page. This firm makes a specialty of preparations for dental use, and dentists should appreciate this fact. Their mark upon any package is a sufficient guarantee of its purity, for there is no firm which has a higher standing in the trade, and none is more enterprising in presenting the new drugs. They send with their preparations property and dose lists, and are always ready courteously to answer letters of inquiry. There should be a better knowledge of drugs among dentists, and it cannot be better obtained than through that reliable firm, Parke, Davis & Co. Write to them, and mention this journal.

A GENTLEMAN received a note from his lawyer which he was unable to decipher. On his way to his office he met a friend at the door of a drug store. The friend, after vainly attempting to read the note, suggested that they step in and hand it to the druggist without comment. The druggist, after studying it in silence for a few minutes, stepped behind his prescription case, and in a short time returned with a bottle of medicine, duly labeled and bearing directions. When the gentleman saw his lawyer, he was informed that the note was a notice for him to call at his office between three and four P. M., of the following day. It is a pretty difficult matter to "stick" the regulation druggist.

—*Medical Age.*

DR. GEO. W. MELOTTE, of Ithaca, N. Y., has devised a set of soldering clamps which will be found very useful, especially to those who are engaged in making crown and bridge-work. Into a wooden handle are inserted iron fingers, the ends of which are adapted to hold securely different forms while soldering. They are made of iron, so that they may be heated and cooled repeatedly, or plunged into water while hot, without hardening. They will frequently obviate investment for the purpose of holding parts together, and will save the time necessary in making special clamps, or in tying together with binding wire, besides holding small pieces more securely.

WILLIAM WOOD & Co., medical publishers, announce that they will not hereafter pay transportation charges on copies of their books intended for editorial notice. That is, in addition to about twenty-five dollars' worth of advertising for a three dollar book, they now ask the editor or journal to assist in paying a part of the legitimate expenses of running their business. And yet it is probable that there will be editors so lacking in dignity as to accept of books at their hands. It will pay to keep an eye on the "book notices" of some medical journals. As for William Wood & Co., it always was a good firm to avoid dealing with.

THE DIRECTOR of the American mint reports the amount of gold and silver used in the arts and manufactures in the United States for 1883, to be: Gold, about \$15,000,000; silver, about \$5,555,500, making a total of \$20,555,500. There was consumed for dental supplies: Gold, about \$39,900; silver, \$6,735, making a total of \$44,635.

A SCANDINAVIAN CUSTOMER was having a liniment prepared by a drug clerk, and calling for the ingredients by the five and ten cents' worth. After it was supposed to be finished, corked and delivered, he shook it up, looked at it, and said, "I will have five cents' worth of *nail olea* put in." Clerk was dubious, and the Norwegian explained, "I don't know what you call it in English; it is oil of big nail." "Oil of big nail, oh! is it oil of spike?" and he answered, "Oh yes, that's it, oil of spike."—*Medical and Surgical Reporter*.

A HYPERCRITICAL MEDICAL MAN found fault with Mary Anderson because of her assuming the stiffness of a corpse immediately on being killed in one of her plays, holding that cadaveric rigidity does not set in until five or six hours after death. The fair actress naively inquired whether it would not be a very severe strain on the patience of the audience to oblige it to wait for six hours until she became stiff after the fashion of nature.

LODGER TO CHAMBERMAID, "Mary, this is the stillest house I was ever in. The landlord and his wife must live like angels in Heaven together; I haven't heard one single sound since I've been here."

MARY, "That's all very nice just now, Mr. Blank, but wait till they make friends again. They quarreled a fortnight ago and haven't spoken to each other since."

THE MICROSCOPE, a journal formerly owned and published by Prof. Stowell, has been purchased and will be edited by the following Detroit gentlemen, well known as workers in the field of microscopy, viz: Drs. W. P. Munton, Geo. Duffield, Frank Brown, and C. G. Jennings. Unquestionably they will increase the good work in this field of journalism, so well begun by Professor Stowell.

THE FOLLOWING are the component parts of a cigar: Acetic, formic, butyric, valeric, prussic, and propionic acids; also creosote, ammonia, sulphuretted hydrogen, pyridine, picoline, and rubidene, to say nothing of the cabbagine and burdockic acid. That's why you can't get a good one for less than five cents.

—*Medical Age*.

THE MEDICAL RECORD modifies some of the ancient adages to suit more modern tastes and advanced ideas, as follows: A cut in time saves nine. Ambulances alter cases. What can't be cured must be regularly treated at the regular rates.

A PLEDGE OF LOVE, a veritable cupid, has made its appearance in the family of Dr. I. N. Love, editor of *The Weekly Medical Review*. Weight 13 lbs. A substantial token of Love, indeed. Congratulations.

PASTEUR has hitherto been unable to practice medicine, or any specialty in it, as he has never received a medical degree. That is now obviated, as an honorary degree has been conferred upon him.

BUFFALO boasts of being the only city in New York in which the births are in excess of the deaths.

THE Independent Practitioner.

VOL. VII.

NOVEMBER, 1886.

No. 11.

Original Communications.

NOTE.—No paper published or to be published in another journal will be accepted for this department. All papers must be in the hands of the Editor before the first day of the month preceding that in which they are expected to appear. Extra copies will be furnished to each contributor of an accepted original article, and reprints, in pamphlet form, may be had at the cost of the paper, press-work and binding, if ordered when the manuscript is forwarded. The Editor and Publishers are not responsible for the opinions expressed by contributors. The journal is issued promptly, on the first day of each month.

THE DENSITY OF TEETH AS INFLUENCED BY THE FOOD AND BY THE ADMINISTRATION OF LIME-SALTS.

BY DR. W. D. MILLER, BERLIN.

ABSTRACT OF A LECTURE DELIVERED BEFORE THE AMERICAN DENTAL SOCIETY
OF EUROPE, AUGUST 2d, 1886.

While many elaborate experiments have been made by different physiologists of celebrity for the purpose of determining the action of inorganic substances, particularly phosphate of lime, upon the osseous system, either fully developed or developing, no experiments of like nature have been made upon the teeth. We have relied altogether upon clinical evidence, which has been so conflicting that, notwithstanding the fact that this question has never ceased to be discussed for the last fifty years, we are not much nearer the solution. It is utterly impossible for anyone to eliminate all the sources of error in observations upon human beings. No one can bring two

individuals under exactly the same conditions, with the exception that one receives lime-salts and the other none, nor can the proper value be assigned to the many other factors which at the same time are in operation. Consequently, different observers secure results entirely different, and often the same observer finds lime-salts in one case apparently producing most beneficial results, and in another none at all. Those who have administered lime-salts to a gravid woman, and have seen the child grow up with strong teeth, have attributed this to the lime-salts; while those who, under like circumstances have found poor teeth, have accused the lime-salts. In both cases the result may have been brought about by entirely different factors.

But this phase of the question has been so thoroughly presented by Dr. Barrett (INDEPENDENT PRACTITIONER, vol. vi, page 453), that it does not require further discussion here.

This subject may, I think, be best studied under four heads.

1. Can it happen that a person who daily takes a normal quantity of food may receive less lime-salts than are required to build up the osseous and dental systems?

2. What effects have been produced upon the osseous system of animals by varying the amount of lime-salts taken in?

3. What effect upon the composition of the teeth of adult animals?

4. What effect upon the development and composition of the teeth of growing animals?

I must state in the beginning, by way of apology, that the work which I have undertaken is by no means complete, yet I present this paper as an introduction to the subject now, since the experiments yet to be made will require eight or nine months for their completion.

The following table which I have worked out, principally by the help of *Koenig's die Mänslichen Genussund Nahrængs-Mittel*, will very materially aid us in the attempt to answer the first question. In this table the figures indicate the amount of each constituent in 100 parts of substance analyzed. The numbers for bread (knowing the amount of saline matter present) were calculated on the supposition that the different constituents maintain the same proportions in bread as in flour:

	Water.	Ash.	Potas- sium.	Sodium.	Lime. (CaO)	Magne- sium.	Phos- phoric Acid. (PO ₄)
Meat of ruminants and fowls.	62.00	1.9	0.75	0.20	0.049	0.064	0.828
Beef extract.....	.....	.....	7.35	2.27	0.08	0.55	5.25
Eggs.....	74.00	.....	0.156	0.208	0.098	0.1014	0.34
Wheat.....	13.65	.....	0.56	0.032	0.051	0.22	0.91
Fine wheat flour.....	13.34	0.48	0.14	0.003	0.031	0.034	0.21
Coarse wheat flour.....	12.65	0.96	0.216	0.0066	0.044	0.077	0.35
Fine wheat bread.....	35.59	.....	0.37	.....	0.082	.....	0.54
Coarse wheat bread.....	40.45	.....	0.38	.....	0.072	.....	0.61
Rice (bolted).....	13.11	1.01	0.195	0.046	0.028	0.095	0.462
Rice (unbolted)	9.55	4.90	.....	.....	.....	.....	.....
Beans	14.76	3.26	1.28	0.032	0.15	0.21	0.18
Potatoes	75.00	.....	0.56	0.027	0.0226	0.045	0.16
Turnips.....	86.00	.....	0.40	0.07	0.126	0.064	0.25
Cauliflower.....	91.00	.....	0.267	0.103	0.189	.....	0.132
Cabbage	87.00	.....	0.34	.....	0.62	.....	0.06
Peas (bolted)	12.73	1.75	.....	.....	.....	.....	.....
Codfish	81.00	.....	0.29	0.76	0.072	0.04	0.29
Bean flour ..	10.84	2.95	.....	.....	.....	.....	.....
Oatmeal	10.07	2.24	.....	.....	.....	.....	.....
Sago meal.....	16.14	0.22	.....	.....	.....	.....	.....
Tapioca.....	14.43	0.25	.....	.....	.....	.....	.....
Ox (heart).....	70.08	0.78	.....	.....	.....	.....	.....
Ox (lung)	81.03	3.39	.....	.....	.....	.....	.....
Woman's milk.....	87.02	0.45	.....	.....	0.075	.....	0.102
Cow's milk.....	.....	0.71	.....	.....	0.164	.....	0.198
Hog's milk...	84.04	1.05	.....	.....	.....	.....	.....
Beer (porter).....	87.60	0.419	.....	.....	0.008	.....	0.092
Water (Berlin).....	.....	.....	.....	.....	0.0141 to 0.0612	.....	.....

If now we suppose an individual to consume on an average daily 1 lb. bread, 1 lb. meat, 1 lb. potatoes, 2½ lbs. beer and 2 lbs. water, we may make the following calculation:

	CaO.	PO ₄ .
1 lb. meat contains.....	0.000491	0.00828
1 " bread "	0.000820	0.00540
1 " potatoes "	0.000226	0.00160
2½ " beer "	0.000180	0.00213
2 " well-water contains.....	0.000753	.....
Total in one day.....	0.002470	0.01741
" " " year	0.90155	6.35465

A young man gives out through the urine yearly 0.095 CaO and 0.15 PO_4 . Subtracting these amounts, we have the total amount taken and retained in the system yearly, 0.8065 CaO and 6.20 PO_4 . This, of course, would be reduced by the amount which passes out with the fæces, which may be very little or very much, depending upon the condition of the digestive and absorptive apparatus. Leaving this out of consideration for the present, we easily determine how many years it will require for one to take in enough lime-salts to build up his osseous system. A skeleton weighing 24 lbs. has, according to Heinby's analysis, 9.26 lbs. lime and 12.9 phosphoric acid, and at the rates of 0.80655 lbs. CaO and 6.20 lbs. PO_4 yearly, it would take 12.4 years and 2.1 years respectively to acquire the necessary amount of lime and phosphoric acid.

From this calculation it will be seen that while we, under the specified regime, have an abundance of phosphoric acid, we have by no means an excess of lime. I have endeavored throughout to take average numbers, and while many will take in more lime-salts, either by consuming more food or food richer in lime (beans, cabbage, oats, milk,* water in lime districts), others without doubt receive less salts, either from being unable to procure the necessary amount of food, or living too exclusively on foods which are poor in lime-salts. Children fed on sago, tapioca, etc., receive, beyond doubt, less lime than is necessary to properly build up the osseous system.

A woman lactating at the rate of 1 liter per day, will give out 0.616 lbs. in a year, besides the loss by excretion. This is more than would be taken in under a regime poor in lime, and would entail a withdrawal of lime-salts from the system, as shown by the experiments of Forster, the soft tissues being affected first, then the bones, and last, if at all, the teeth. For this evil the remedy is evident; a sufficient quantity of plain, wholesome food, not notoriously poor in lime.

Dr. Casse, director of a hospital for rachitic children in Middelkirke, near Brussels, has constantly between one and two hundred rachitic children under his charge. He informs me that he uses no other remedies than good air and wholesome food, milk, peas,

* A quart of cow's milk daily will alone furnish in eight years as much lime as is contained in an ordinary skeleton.

beans, etc., forming a prominent factor in the regular diet of the children. Under this regime marvellous cures are accomplished. Kirk saw a marked improvement in the teeth of the children of a Philadelphia hospital, resulting from a diet rich in lime.

Another very important question is suggested by these facts. Supposing that the food contains less lime than is needed by the patient, can we make good the deficiency by administering the phosphate of lime as a medicament? This brings us to the question given under the second heading—What effects have been made upon the osseous system of animals by varying the amount of lime-salts taken in?

The combined results of a very great number of experiments indicate that in the adult animal changes in the osseous system take place very slowly, and Hoppe-Seyler asserts that it is impossible to effect any change in the chemical composition of the bones by withholding the normal amount of lime-salts, or by administering an excess. The experiments of Foerster (given below) hardly bear out the statement of Hoppe-Seyler. That in the case of young animals the administration of lime-salts, where they are not present in normal quantities in the food, will result in great good, is clearly proved by the experiments of Voit, Tuzek, Hofmeister, and many others. Voit and Tuzek fed young doves on wheat which had been freed from lime and phosphoric acid. They soon became ill, and died with symptoms characteristic of rickets, whereas doves treated in the same manner, with the addition of small pieces of mortar, developed normally. Young dogs fed with a mixture of meat and bacon, containing very little lime phosphate, exhibited the same symptoms, which were completely relieved by administering bone-ash. The skeleton of the dogs in the first series contained 71.9 per cent. water, in the second only 64.9 per cent.

Here the lack of a sufficient quantity of salts in the food was made good by administering the mineral. I am, moreover, at a loss to see what difference it can make, as far as the capacity for resorption and assimilation is concerned, whether we administer a grain of phosphate of lime in the form of a beefsteak, or as bone-ash, or as chemically pure phosphate of lime. After it has been subjected to the hydrochloric acid of the stomach, it will in both cases be reduced to identically the same form. In both cases we obtain a solution of the phosphate in hydrochloric acid, then a decomposi-

tion of the phosphate, or a part of it, setting free phosphoric acid and forming chloride of lime. A part may remain undecomposed, as phosphate of lime, particularly if the gastric juice is deficient in hydrochloric acid.

I should say, then, that, especially in the case of young animals, the development of the osseous system may be markedly influenced by the quantity of salts in the food, and that in case the foods contain too small a quantity, it may be made good by administering the necessary amount. The first requisite for the development of a good osseous system is the proper quantity of lime and phosphoric acid, and to secure this, it is not altogether immaterial what class of food is taken, as the above table will show. If a man could live on tapioca pudding alone, and consume two pounds of the starch a day, it would require about 150 years for him to take up enough lime to make his bones, to say nothing of the rest of his body, taking no account of the waste by excretion.

The second requisite is the absorption, and the third the assimilation of the lime and phosphoric acid. If either of the last two requisites are not fulfilled, the administration of lime-salts will probably not accomplish the desired end. It would not do to say it will not accomplish anything, since even in cases of defective absorption and assimilation, the amount of salts which is utilized may bear a certain proportion to the amount presented.

In answer to the second question, we would say, then, that the fully formed bones of the adult animal respond very slowly to any change in the normal amount of lime taken with the food, and that even in lime-hunger the bones do not readily give up their phosphates (Weiske, Zalesky, Hoppe-Seyler, etc.), but that the bones of young animals are very sensible to any restriction in the requisite quantity of saline matters, and that any lack of lime in the food may be made good by administering it in form of bone-ash, or lime-salts and phosphates.

We come now to the third question. Can the chemical composition of adult *teeth* be changed by a change in the quantity of lime-salts in ordinary food? In other words, can the lime-salts of the teeth be withdrawn for use elsewhere, or excreted?

The fact that some bone gives up its lime-salts very tardily under all circumstances, would lead us to infer that the same would be the case with the teeth, even in a greater degree. On the other hand,

the rapid breaking down of the teeth during pregnancy has been almost universally attributed to the robbing of the teeth of the mother of their lime-salts, to build up the fœtus. While dentists urge a diet very rich in lime, others restrict the pregnant woman to a diet containing but little lime, in order that the bones of the child may not become so rigid as to increase the difficulties of childbirth.

These ideas may all be defended. A number of experiments of Forster (*Zeitschr. f. Biol.* Bd. IX, S. 297) show that under continued feeding with ash-free substances, the animals not only suffer from inanition, but that under these conditions more lime is excreted than can be taken from the soft tissues, consequently a part of it must come from the bones.

This results, according to Zalesky and Hoppe-Seyler, not in a change in the chemical composition of the bones, but simply in rarefaction, the organic and inorganic parts being removed simultaneously, as in resorption.

A case in which a change in the chemical composition of the teeth seems to have taken place, recently came under my notice. For three or four years I have had the care of the teeth of a well-known pathologist in Berlin. They are of exceeding poor structure, very soft, and seem to offer scarcely any resistance whatever to the agents which produce decay. When I called the attention of the patient to this fact, he told me that a few years ago he did not have a trace of decay about his teeth, and that he had always been told by dentists that his teeth were of the best structure and could never decay. He also stated that for some years past his urine has constantly contained "enormous quantities" of lime-salts. He had recently detected certain defects in his osseous system, which he had thought accounted for the excess of lime in his urine. He now wished to know whether a part of this excess did not come from the teeth, thereby accounting for their diminished hardness. But many cases of this kind, where hard teeth have apparently become very soft and soft teeth very hard, are no doubt familiar to every practitioner, and do not help much toward a solution of the question.

We have seen that while authorities agree as to the effect produced upon young animals by withholding the normal amount of lime-salts, they differ very widely as to the effect of lime hunger upon adult bones, nor are the views of dentists regarding the possibility of

a change in adult dentine any less at variance, though I am not aware that any experiments upon lower animals, the only means by which the question can at present be solved, have yet been made.

The experiments which I have undertaken upon this point were begun upon three grown and two young dogs. Unfortunately, one of the young dogs died from the anæsthetic, and the other got a violent diarrhoea, as a result of being deprived of the necessary inorganic materials, of which he died before the experiment progressed far enough to obtain any results. From each of the three grown dogs I extracted, under anæsthesia, with great difficulty, an eye-tooth. The dogs were then put on a diet of fresh bacon and sugar, which they took very well for about two weeks, when they refused to take their food, but by slightly frying the bacon and occasionally adding small pieces of mashed meat (the salts being mostly removed), I succeeded in keeping them on their legs. After three months another tooth was taken from each dog, and the food changed to horse-meat, with salts of lime. A very marked change was brought about in their condition in a short time. After fifteen weeks, *i. e.*, about seven months from the beginning of the experiments, they were brought to a close, and the dentine of the teeth analyzed, showing the following proportion of lime-salts:

	First.	Second.	Third.	Average.
At beginning of experiment.....	72.66	72.35	70.77	71.93
After 3 months.....	71.52	72.25	70.83	71.80
After 15 weeks.....	73.71	71.70	71.86	72.22

From the first of the experiments it appears as though a marked change had been produced, a falling off of 0.86 per cent. during the first twelve weeks, and a rise of 1.59 per cent. during the last fifteen weeks. This result, however, is not borne out by the other experiments. The second shows a slight fall during the first period, but no rise during the second, while the third shows a rise during the second period, but no fall during the first. If we take the average of the three results we get a fall of 0.13 per cent. during the first, and a rise of 0.42 per cent. during the second period. Although, on the whole, it might appear that a change had been produced in the proportion of lime-salts to organic matter in the teeth, yet the number of experiments is too small and the results too little pronounced to admit of drawing any definite conclusions.

As simple as these experiments appear, they are not without a number of difficulties. The length of time necessary, the difficulty

of securing lime-free food which the animals will take, the many sources of error in the analyses by which slight changes may escape detection, the very considerable expense accompanying the experiments (\$30 to \$40 per dog), are some of them. Nevertheless, I hope in twelve months more to obtain results which will throw some light upon the third and fourth questions suggested at the beginning.

In the discussion which followed, Dr. Jenkins called attention to one source of elimination of lime-salts not mentioned, viz., salivary calculus. He was also of the opinion that the acid condition of the buccal fluids was a prolific source of caries during pregnancy.

Dr. Miller replied, thanking Dr. Jenkins for the mention of salivary calculus, which, in many cases, is a source of loss not to be overlooked. As for the caries of pregnancy, he had not attempted to furnish an explanation for that. His object had been to show that, under certain conditions, the system, particularly of the child, less frequently of the adult, does not receive enough lime to meet the requirements, and that in such cases attention should be given to the character of food taken, and in case it is poor in lime-salts they may with advantage be administered as a medicament.

A VISIT TO FOREIGN DENTAL SCHOOLS AND OTHER OBSERVATIONS.

BY A. W. HARLAN, M. D., D. D. S., CHICAGO, ILL.

(Continued from page 397.)

Germany, to the American mind, usually includes North and South Germany and Austro-Hungary, having a combined population larger than Great Britain, Ireland, Belgium, Holland, Switzerland and Italy. Within the realms of the German Empire and the Austro-Hungarian monarchy are many comparatively large cities and towns without a single practicing dentist. In 1880 there were cities of ten to twenty thousand population where the only dentist was the local cupper and leecher, who was likewise, in many

instances, a tonsorial artist. In consequence of these facts and the low wages of German artisans, laborers, and those employed in agricultural pursuits, we find a poor appreciation of the services of dentists among people who, in the same ranks at home, have their teeth attended to with reasonable regularity. The residents of such towns requiring dental skill, and having the means to employ it, generally go to the large cities of their own country, or to cities of neighboring countries, such as Venice, Milan, Geneva, Turin, Rome, Zurich, Paris, Brussels, Amsterdam, The Hague, Copenhagen, or Stockholm, and occasionally to St. Petersburg, Moscow, etc. Those whom they employ, thereby gain a continental reputation, which is of great value to them at home. When it is known that Count X. or W. employs Dr. G. or K., others from his own locality flock thither. Hence there is little inducement for an educated and competent dentist to locate in a comparatively small city or town, unless it be a health resort, a growing manufacturing city, or the residence of members of the nobility. These, I believe, are some of the reasons why there are so few dentists in many places of a hundred thousand inhabitants or less.

Many things are different in the Old World, when viewed from any standpoint that we may choose as our point of observation. At home curiosity prompts many people to try a new comer in almost any profession, while in the older countries, unless the new arrival is introduced by the late proprietor, or is his copartner, or unless there be some other fortunate circumstance, he may have to wait a long time for a paying practice, and often he will not get it at all. There was a time when almost any American dentist could locate in a foreign country and put up a sign "American Dentist," and soon have all he could well attend to, but those days are past. Too many Germans and others now possess American degrees, and they put up signs of the same character, and issue cards with "*Dentiste Américain*" on them, and take the native into their folds as easy as we can whistle Yankee-doodle. There was a period in the history of dentistry when it was our proud boast that no one could fill a tooth like a native Yankee, or nearly as well as he, but I believe there are many men of all nationalities, spread all over Europe, who are quite our equals as operators. In proportion to the number of practicing dentists, however, we can still take the lead, and I think the State of Illinois has more fine operators than the whole

German Empire could muster, of native material, although some of them can and do make fine fillings, both of soft and cohesive gold. I have seen them, and know whereof I affirm. We attempt to save, and succeed in saving, more teeth than they do, while the German dentist, like his English brother, either extracts, pivots, or fills with cement or amalgam. I speak now of the average every-day dentist, and he easily outnumbers the really skilled operator ten to one. In Germany one sees many front teeth that have been filled with amalgam. This is a practice which American dentists are too conscientious to indulge in to any great extent. It may be that a few unscrupulous men at home practice in this way, but I think such practice is very limited. I will say this, however, for my German *confrère*: he undoubtedly saves more teeth by so practicing than he would by inserting poor gold fillings. I believe the average German dentist makes a better amalgam filling than the dentist of the same grade at home. He takes more time, and the amalgam has more copper in it than that which is used in the United States.

American filling materials and instruments are sold in all the large cities where there are dental depots, so that the American dentist practicing there has as much to select from as we have in New York, or elsewhere. The German oxy-chlorides and oxy-phosphates are equal, if not superior to our own, and everyone now knows how wonderfully soft is the Wolrab gold. The rubber dam is used to a limited extent in the cities, but not nearly so universally as at home. The rubber of German manufacture is of excellent quality, and I saw some that was rough on one side and smooth on the other that I liked very much. It is easy to adjust, as the fingers do not slip in stretching it over the teeth.

In Berlin, as elsewhere, when you ask for novelties they always bring out something from America. Reflectors and lamps for illuminating the mouth, and immense machines for vulcanizing and stamping plates (metallic), pneumatic pluggers, etc., are very common. I noticed that all instruments for filling were larger than ours, with the exception of mouth mirrors. Of these latter I saw many forms, very neat in size and shape. I found some very beautiful broach holders and nerve broaches, also. The silk paper for making cones for drying out root canals and for conveying medicines to the apices of roots is very useful.

Dental fees in Germany are low. I was told that even the best

American dentists seldom received larger sums for a single filling than 60 to 90 marks (\$15 to \$22), the minimum being from 15 to 20 marks (\$3.75 to \$4.80). I believe that teeth are filled with amalgams and cements lower than in England, some dentists making such fillings for from 1 mark (24 cts) upwards. The best dentists of course receive higher fees, but they are not so high in Germany as in England. Artificial teeth are ridiculously cheap, as there are many who only extract teeth and make substitutes. There are many good mechanical dentists in the larger cities, but I should say, from my own observation, that they are better mechanics than artists, as they do not take nature for their models. The teeth made by them look artificial and unnatural. Many plates are made of silver. I saw very few natural looking artificial teeth in the mouths of those I examined. The custom prevails of exhibiting boxes of teeth, filled and unfilled, of sets on all kinds of bases, elixirs, brushes, powders, etc. These are usually at the entrance to the stairway leading to the apartments of the dentist. None of the first-class dentists resort to this method of advertising in any of the old countries. (*En passant*, there is one short street in London where there are located about fifteen or twenty dentists (?) on opposite sides of the street, whose sole stock in trade appears to be exhibited in immense show windows extending across the whole front of the house; each article, from a tooth-pick to a set on gold, is labeled with the price. Signs reading: "Springs put on while you wait," "Sets made complete in six hours," and numerous others quite amusing to read, all conspicuously displayed.) Of course there are many poorly educated men practicing dentistry everywhere, and we cannot boast much of our own advertising dentists, but they do not come quite up to the tactics of some of those in the Old World. Quackery is usually the outgrowth of ignorance in the first instance, but it must be fed by all classes, judging by the testimonials which one reads on the hand-bills of some European dentists, and the pages of pamphlets and newspapers in our country. The millennium will undoubtedly arrive when they are all dead and gone, and their places are filled by the new generation of dentists, whose preliminary education will be such that they will know before entering upon the study of dentistry that hydrated starch when brought into contact with human saliva will *not* produce indigestion and constipation.

Previous to the opening of the Dental Institute in connection with the University of Berlin, systematic study of dentistry was not insisted upon in the German Empire. It is true that in a few cities where Universities were located, such as Breslau, Halle, and one or two others, a certain amount of instruction was given by lecturers from models, and the construction of artificial teeth was taught in the same way; but these courses were not comprehensive, and the certificates issued were not in the shape of a diploma. In order to obtain the title of "Zahnarzt," the candidate after pursuing his studies (where he pleased generally) was examined by a commission, and if found qualified the coveted title was his. Where titles were not issued by a University under its seal, the commission was appointed by the State, so that the possessor of the title could not add after his name and title "Leipzig," "Tuebingen," or the name of any University. I presume the graduates from the Institute in Berlin, and others where dental departments are established by the authorities, will be permitted that privilege in the future. Hence, in a few years, we will read Dr. J. Putgelli, Zahnarzt (Berlin), 20 Brown Street, Cosmopolis, W. T.

I spent a portion of two afternoons in the rooms of the Dental Institute in Berlin. I should say that there were about thirty or thirty-five students engaged at the chairs, either operating or assisting each other. The professors are also the clinical instructors, which is a good feature to begin with. All the lectures on anatomy, physiology and other strictly medical subjects, are taken by the dental students in the medical departments. The students are required to take practical instruction in the infirmary during two semesters of five months each. They are also required to work in the dental laboratory on practical cases for the same length of time. One of the professors told me that the operating and laboratory work was not obligatory in the rooms of the Institute, if the candidate for honors possessed the desired knowledge at his final examination. I presume, in time, the authorities will insist on this. The rooms are well equipped, but the light is not as good as it might be. Like students everywhere, they prefer to make gold fillings. Many of them wore glasses, which is quite common in Germany, in all ranks of life. On account of the necessity for the diploma of a gymnasium (high school or academy), before entering college, the students are older than ours. There were no women in the class. I witnessed

some of the operations, and they were quite equal to the average in this country. All the lectures on dental subjects are delivered by three or four professors and one assistant, as are also the demonstrations in the various departments. I was told that there were nearly a hundred matriculates for dental honors in the University. Many of them were pursuing their primary studies in other departments, so I did not see them. I predict a brilliant future for the Institute, on account of the length of the period of study, as it will require about five or six years, on an average, for the student to emerge a full-fledged Zahnarzt. At present the clinic rooms are not in the University buildings, but are located some distance from them, which is an inconvenience, but by and by they expect to have a new building of their own.

The establishment of Dental Institutes in the Universities is a good thing for German dentistry, as they will, in a few years, raise the standard so that one cannot find a dentist who has not used "one-eighth of an ounce of gold in ten years' practice." I doubt not that there are to-day dentists in Berlin with a large practice who do not use one-half ounce of gold in a year. The graduates of the Institutes will change this, and they will also awaken the appreciation of the middle and lower classes by doing operations in their clinics. They do not charge for anything but gold fillings in the Institute, which is a mistake in my opinion, for reasons already stated in the May number of this Journal.

Dental journalism flourishes in a larger degree in Germany than in England, and it will be noticed that there are more journals published in that country. Several of them present original communications in each number, but many times their pages are filled with matter from foreign sources, a practice which we at home do not very strongly approve. If a better system of condensation were employed they could give more professional *news*, and this, it would seem, would be equally valuable for their readers. It may be, however, that the editors know what will suit their readers better than the writer. At one time or another I have seen "The Deutsche Monatsschrift fur Zahnheilkunde," "The Correspondenz Blatt fur Zahnarzte," "Centralblatt fur Zahnheilkunde," "Die Zahntechnische Reform," "Vierteljahrsschrift des Vereins Deutscher Zahnheilkunde," "Oesterreichisch-Ungarische Vierteljahrsschrift fur Zahnheilkunde," and that invaluable publication known as Peter-

mann's "Zahnarztlicher Almanach." If I have omitted any journal in the above list, it is because I have never seen a number of it. If there are no others published in Germany and Austria, it seems to me that this list would convince the unprejudiced observer that German dentists were readers, and when a nation reads we are pretty certain to hear from it, either practically or scientifically.

I have not had the pleasure of attending a real, live German dental society, hence it is not possible for me to say anything about their methods of conducting one. But, from the number now in existence (twelve or fifteen), not counting small congregations in outlying districts, they must have about as lively times as we at home. Their custom is, I believe, to elect men to office who have done meritorious work in some special field of labor, and continue them in office until a worthy successor is found willing to take the reins of government. (At home we do not follow this practice, preferring in general to name a new set of officers each succeeding year.) The German method is, in my opinion, the better and safer one to follow, especially in all delegated bodies. Much original work is presented by the members of German dental societies, but the results of investigations are not so quickly or readily accepted as demonstrated facts by them, as they (the members of societies) are more conservative than Americans.

The American Dental Society of Europe has been, and is now, an element of power for advancement in all foreign countries, and many Germans educated in American schools are members of it, and they are always heartily welcomed at its meetings. Judging from the reports of its meetings, the Germans are doing much in the way of working out practical problems and contributing their share in the march of scientific progress, so ably begun by our own industrious and indefatigable investigator, W. D. Miller.

In closing this disjointed and rambling article on German dentists and dentistry, I have only to say that all is spoken with friendliness and without malice, for I was handsomely treated and entertained in the most hospitable manner, and I hope at some future time to reciprocate the courtesies shown me by native Germans. In my next communication I will pay my respects to *La Belle France et les Français*.

(TO BE CONTINUED.)

GOLDEN.

BY J. W. CLOWES, D. D. S., NEW YORK CITY.

READ BEFORE THE CENTRAL DENTAL ASSOCIATION OF NORTHERN NEW JERSEY.

Gold has the significance of value. The "Golden bowl" of life has a vital issue—The "Golden rule" is our perfect law—"Golden harvests" are garnerers of plenty, and "golden opportunities" the mediums of success! Gold is an excellent material for filling teeth, but *its efficiency depends chiefly upon the manner of its use*. The first gold fillings of which I have any recollection, were seen in some attempts upon teeth of negroes, who came before an operative clinic of the Baltimore College of Dental Surgery, in 1840. Each student was allowed to take his turn in excavating and filling a cavity with gold. I was the third novice on trial, and, having looked upon my predecessors as blunderers (because their fillings would not stick without assistance), begged not to be helped over any difficulty that might occur. The confidence of youth encompassed me, and made the filling of a cavity seem so simple and easy that I felt sure of success. But my failure proved worse than the others, and as in my first speech at a debating society, "Mr. President" was all that would come out, and brought down the house, so, in my first effort at filling, nothing would stay in, and down came the house again. But the lesson learned as against presumption was Golden.

There was a famous teacher in that earliest school of Dental Science, whose operative theories have been the text and guide of my professional life. He had great celebrity as a dentist, and I resolved to obtain some personal evidence of his skill. By persistence I captured thirteen fillings of the purest gold, and was proud of my achievement. A few months later ten of those fillings vacated their places, and the remaining three had no saving force. It was the old story of good teaching and bad practice, told then, and which, more the pity, will be repeated while the world endures. Adverse experience did not stop, but rather stimulated effort to advance its lines and make a golden progress. After years of preparation I came to a business settlement. My motto was "All for

my profession," and my special mission "Salvation to human teeth." To this end I labored, and was never unmindful of the grandeur of my calling.

One day there came to my office a gentleman whose upper front teeth contained approximal fillings of gold. I had never seen anything to equal them in excellence. This work of a master had kept its place for twenty years. I sought out its author, and made a long journey to find and employ him myself. Having reached his place, I was not long in waiting, when an aged man, emaciated, feeble, and wearing green goggles, appeared before me. This was the executor of that wondrous work, done twenty years before. My courage fell; he had been skillful then, could he be so now, was the question that crossed my mind. I was invited to take the chair, when my fears were increased by seeing him *sit down* to his work. Weary and wan he was, but faithful ever. He could do no otherwise than well. It was his inspiration and his habit, and he had not changed. A few hours spent with him brought goodly advance in knowledge. His was the best practical school I had ever attended. By the same acts he saved, taught me to save, and impressed ideas worthy of adoption regarding desert and the rewards for merit. A youthful alumnus, having gone through his legally prescribed studies, receives the addendum of D. D. S., which signifies only that he has been in the way of learning. But to him whose work has been perfected through much experience and trial, that title belongs with a *post attaindi* extension, D. D. S., H. A., "Doctor of Dental Surgery, Having Attained." The dental father whose labors were blessings to me, deserved these titles well. Those feeble hands have laid their burthen down. The faithful worker has gone to his rest. He sleeps in Greenwood now, and his record is Golden.

Through the singular conduct of a professional brother my next step forward was made. This gentleman had come on a visit to the place of my residence, and I requested him to fill a frail lateral incisor. For some reason he did not take kindly to the operation. In fact he was angry, and manifested that disposition by the roughness of his hand. Up to that time I did not know how much of force a weak tooth could stand. But when he had finished, timidity was gone, and my confidence in the strength of dental tissues was greatly increased. The rough hand and anger had made a revelation, and my perceptions were Golden.

About that time a merchant from New Orleans called to see if I would fill a cavity temporarily, until he could go to his favorite dentist in New York. I did not temporize, but while my work was under way glanced from time to time at a right lateral incisor, decayed almost to exhaustion, and enquired why he did not have it saved. "Oh," was the reply, "that tooth has been a great cross in my life. My dentist says it cannot be filled, and advises leaving it to fall off—after which he proposes to place an artificial crown upon its root." If it were possible, would you like to have it saved? "Indeed I would," he said, "and be ever grateful for so valuable a service." I took the contract, and executed it with entire success. That man came to temporize, but all his teeth were permanently saved, his life-long friendship secured, and my triumph was Golden.

One more incident, and our field of observation shall change. After my coming to New York, a bachelor consulted me in reference to a difficult cavity in one of his upper front teeth, which was always losing its filling. It seemed to have no retaining capacity, although several professional *élites* had done their best for it. I was questioned as to the possibility of making anything stay, and promised to try. The great had failed, and I was ambitious to win. My work had been a fixture for eight years, when that bachelor suddenly appeared before me with the abrupt declaration that my filling had come out. Becoming conscious of an indiscretion, he attempted to lessen its force by adding, "It was not your fault; the filling remained longer than all its predecessors and is amply excused." I did not admit the vacation, but proceeded to try the case while standing at my chair. "You noticed the filling loose in your mouth and removed it thence with your thumb and finger?" Oh, no, he had not *seen* it, and supposed it was swallowed while eating. "On your way to my office cold air struck the cavity and gave you pain?" He had felt no pain, and for fear of trouble had hastened to tell me what had happened. "How did you know the filling was out?" He had recently been married, and desiring to transfer the care of his wife's teeth to my hands, told her the story of his dental experience, dwelt with emphasis upon what I had done, and requested her to look, on doing which she exclaimed, "Why, I see a black hole there now." All the evidence being in, I decided no change had occurred, and that the cavity was still full. The filling

was an approximal one and, shaded by a slightly projecting canine, appeared dark upon its surface, but when seen in the light was yellow and Golden.

These simple incidents, these accumulative links in the chain of progress may have failed to interest you, yet out of them and their like has grown the practice I represent to-night. Given a full denture of middle age and average natural strength, with adverse impingements and lateral contacts, with retaining pockets and other accessories to decay; given the crown and approximal cavities usually accompanying these conditions, what shall be done most effectually to save such teeth? "Fill them with gold," you say, but this does not settle the matter. The problem is too serious to solve in that way alone. Its solution continually goes on, and is seldom completed. I apprehend that failures come mainly from wrong beginnings. We do not study cause sufficiently, and are astonished at effects. Let us begin right now. In the name of common sense, what is the first inducing cause of decay between teeth? Believe your own senses, and say contact. Why contact? Because the touching of two teeth, with the gum as a base, makes a triangular pocket which catches and retains foreign matter and sets up a chemical laboratory, wherein are generated acids that destroy the dental tissues. What pockets do for the sides of teeth, crevice and fissure accomplish for their crowns. If, then, the dentures you desire to save are sorely beset, and you know the sources and direction of attack, do not let fossilized ideas or the rut of precedence restrain your action. Rise once for all above the fallacy that enamel is an essential protection against decay. In smoothness alone has it any right to this claim? Its intent, mainly, is to avoid sensitiveness and resist abrasion. If contact is inimical, then change it for a friendly condition, and take the first righteous step toward salvation. Separate freely, and prepare the way for excavation and filling. Make plenty of room. Separation, in its best form, is a combination of the approximal arch and lingual bevel. The one maintains acquired space, the other repels extraneous deposits, and altogether facilitate operations and subsequent care.

Proceed without doubting. There is no occasion to cut down and waste by those terrible slots that reach from turret to base, from crown to foundation. No need to deface the beautiful

structure which adorns, while yet it conceals. So excavate, if possible, that when your fillings are in place, no eye will discover that your hand has been there. In your cavities make honest, fast-holding undercuts, and as you are filling with gold, don't deceive yourselves by eschewing retainers. They are absolutely essential to good work. Use adhesive gold always, and be grateful that such a blessing exists. With fine serrations pack in by hand pressure. Condense as you progress, and in nowise neglect at the close to burnish finely and firmly. This plan, explained in brief, involves the æsthetic sense and highest expression of dental art. Saving fillings of gold are extremely rare. They are as one to a thousand, and shine out amid encumbrance and dross like bright particular stars from a darkened sky.

Oh, gold ! Oh, virgin gold ! What desecrations are committed in thy name. The fillings that fall out and confess are respectable as compared with those that stay in and deceive ! Indelicate obtrusion and garish show usurp the places of retiring excellence and modest worth. Jack-screws, and clamps, and mallets of various device, lead on the assault, and nature in the vestibule of her most beautiful temple is subjected to violence. Three generations have given me their faith. Three generations have received the best in my power to bestow, and they ask me now to whom they shall go when my labors are done. I cannot reply. But life, and love, and plenty, and favor abide with me still—for saving is Golden !

Reports of Society Meetings.

AMERICAN DENTAL ASSOCIATION.

TWENTY-SIXTH ANNUAL MEETING, HELD AT NIAGARA FALLS,
AUG. 3, 4, 5, AND 6, 1886.

REPORTED FOR THE INDEPENDENT PRACTITIONER BY "MRS M. W. J."

WEDNESDAY EVENING SESSION.

The discussion of Operative Dentistry was continued for the exhibition and explanation of the appliances named in the report of Section IV, which was then passed.

Sections II and III were called, but were not ready.

Section V, Anatomy, Histology and Microscopy, reported through

the chairman, Dr. Frank Abbott. He said that though little had been published during the year, much work of very great importance was being pushed forward, which would, in due time, be given to the profession. The only paper of especial interest in this line was one published in the *INDEPENDENT PRACTITIONER*, from Heitzman and Bödecker, entitled "Eburnitis, or Inflammation of Dentine." Dr. Abbott reminded the Association that, in 1879, he had published the result of his investigations, attributing caries of human teeth to a process of inflammation, a view which was opposed by many, on the ground that there was not sufficient living tissue in the dentine to permit of inflammation, even under the irritating process of caries. He said that the more he studied specimens of carious teeth, the more firmly he became convinced that his original position was correct. The recent article referred to clearly establishes the correctness of that position, even where only slight caries exists, and sometimes even when no caries at all is present.

Nothing of importance, either in Anatomy or Histology, had been brought to the notice of Section V. Only one paper was offered, which Dr. Abbott proceeded to read, under the title

HYPEROSTOSIS OF ROOTS OF TEETH.

Under this term the author includes all forms of pathological new growths of cementum, such as osteoma, exostosis, hypertrophy of the cementum, etc. As causes of this condition he enumerated irritation of the cementum through caries of the crown or neck, or exposure of the pulp; localized irritation of the pericementum, as from gout, etc., and irritation of the pericementum of upper teeth from gravitation, after-loss of antagonizing teeth.

Tumors have been considered as the result of chronic irritation of tissue. The theory of Cohnheim was that they were the result of a "misplacement of embryonal germs." The author of this paper thought that, on the one hand, such misplacement might occur without causing tumors, and that, on the other, tumors were found that were not even traceable to this cause.

Chronic irritation of the cementum may result in a new formation of cementum, but the question was, can it occur after the cementum has been fully formed? This question he answered in the negative, basing his opinion upon the microscopical studies of such formations, which had convinced him that it was, in most instances, a foetal malformation.

If the roots of a carious tooth were found in an hyperplastic condition, it would at once be inferred that the inflamed pulp had led to pericementitis, and this to hyperostosis of the roots; but if all the roots were uniformly enlarged or fused together, it would be just as possible that this condition had existed before caries made its appearance, especially if, on grinding such teeth for microscopical examination, it was found that caries had not been sufficient to cause inflammation of the pulp, or if the condition of the dentine was such as could only have resulted from malformation at the beginning of its growth in foetal life.

From a careful study of a large number of specimens, he felt convinced that the teeth were sound and the pulps alive when the bony growth was formed; in fact, he doubted the possibility of an osseous new formation after the death of the pulp; that if it had existed previously, its growth would cease with the life of the pulp. If a tooth was extracted to relieve pericementitis and found to be exostosed, it would hardly be considered that the pericementitis had caused the exostosis; the contrary would be the conclusion, the enlargement being the primary, and the pericementitis the secondary features. Cementum being identical with bone tissue, they are undoubtedly both built from medullary or embryonic tissue, whether cartilage or fibrous connection tissue is formed first. The lacunæ contain living protoplasm, and the canaliculi for tenants hold fibres of living matter. Only one portion of the protoplasm is transformed into basis-substance, that is, the lifeless liquid, which changes into a solid glue-yielding mass, forming the matrix into which is infiltrated the lime-salts. Augmentation of the cementum is impossible without a preceding augmentation of the medullary tissue, this being caused by increased nutrition or an irritation.

Bödecker has demonstrated that in normal cementum the lacunæ contain protoplasm, a portion of which is living matter, the whole basis-substance being traversed by a delicate reticulum containing threads of living matter, the cementum not being a mere inert mass of lime-salts with hollow lacunæ and canaliculi, even pathological cementum being endowed with the same properties of life. The process of the development, growth, enlargement, destruction and re-formation of cementum can be understood only as it is admitted that it is a living tissue.

The disease of hyperostosis attacks only bicuspid and molars, and

more frequently the teeth of the upper jaw than the lower. These malformations cause facial neuralgia of the most severe and unyielding character, its diagnosis being at the same time very obscure. The symptoms are usually a slight continued uneasiness in the jaw, with a little soreness of the tooth in biting, increased by excessive pressure, the pain usually not localized positively in any one tooth. Sometimes several are extracted before the exostosed tooth is found and relief afforded. The pain, however, often continues, even after the last tooth is extracted. The different varieties of hyperostosis, as illustrated in over seventy teeth, were classified by the author under four heads:

- (1st.) Circumscribed hyperostosis ;
- (2d.) Diffused hyperostosis, with roots separated ;
- (3d.) Diffused hyperostosis, with roots united ;
- (4th.) Two or more teeth united through hyperostosis.

These groups were again subdivided, the first into—

- (a.) Osteoma on the body of the root ;
- (b.) On the apex of the root.

Each may vary in size from microscopic to the size of a lentil or pea, but usually with nodular surface. This form usually appears on teeth of which the crowns have been more or less destroyed by caries, with, probably, long exposed pulp, and is usually attributed to localized pericementitis. As, however, the death of the pulp stops the formation of osteoma on the roots, such tumors must have commenced long before the exposure of the pulp, causing a slight but constant irritation of that organ, and transferred to the pericementum, the irritation of the pericementum, while the pulp is living, causing the increased cementum.

In the second group, the roots are affected without the least symptom of disease upon the exposed portion of the tooth, the malformation probably dating from the beginning of the formation of the cementum. In these, the hyperostosis invades the roots from the apex to the middle, or two-thirds their length, or even to their necks, the bulging of the cementum sometimes overlapping the enamel, the roots looking clumsy and shortened, the mass partially filling the space between them.

In the third group the apices may be free and straight, or free and curved, or the roots may be united their entire length, the osseous outgrowth accumulating at the point of junction of the roots.

The third class of this group is quite common, this being almost the normal condition of wisdom teeth, only slight furrows indicating any separation of the roots, and the osteoma, when found, a clumsy, nodular mass.

The fourth group is of rather rare occurrence. The teeth may be united either at their apices or at their middle, or there may be a complete union of the roots. It is probable that at least one of the germs was malposed at the time of embryonic arrangement, and that the alveolar septum did not form at all, the mutual pressure from development of the roots causing the irritation which led to the new formation.

In the collection of teeth from which these studies were made, was one exception to the rule that only bicuspid and molars are affected by exostosis, the specimen referred to being a completely united upper canine and lateral incisor, with only shallow furrows reaching nearly to a common apex, with single large foramen—evidently a case of foetal malformation.

Microscopical examination of sections of teeth affected with this disease showed the dentine in some cases normal, and in some the so-called interglobular spaces; in others the dentinal canaliculi of the root were arranged in bundles, between which were areas nearly or quite destitute of canaliculi, but with small interglobular spaces. The interzonal layer, between the dentine and cementum, exhibited osteo-dentine, the result of incomplete calcification, extending into the neck of the tooth, though less than on the roots. At the junction of the roots the cementum is found in connection with an irregular formation of dentine, or vaso-dentine, as illustrated by Wedl. Next to the layer of osteo-dentine is invariably a granular layer, which is destitute of cement corpuscles.

The hyperplastic cementum is often traversed by medullary canals, carrying central blood-vessels. The dentine often shows interglobular spaces filled with granular protoplasm serving as the termination of dentinal canaliculi, with their fibres of living matter.

Vaso-dentine presents to the naked eye a high degree of transparency, low powers of the microscope showing a varying number of medullary canals. The canaliculi contain medullary tissue and capillary blood-vessels, with glistening granules of lime-salts sometimes, in dilated portions of the canals. Sometimes extremely fine canaliculi run in fan-shaped groups, or they may assume the shape

of a fountain, or other beautiful and striking figure. Higher powers of the microscope plainly show the medullary contents of the medullary canals, in which may be seen capillary blood-vessels. The canals and blood-vessels are unquestionably in communication with the blood-vessels of the pericementum.

In all of the specimens, the pulp chamber and often the canals appear considerably narrowed by formations of secondary dentine, the pulp-tissue containing "pulp-stones," or minute calcareous depositions. The enamel of such teeth is usually imperfectly calcified, with irregular and curly enamel rods.

A carefully decalcified portion of hyperplastic cementum, mounted in glycerine, under very high power, is found to be identical in structure with normal cementum. All canaliculi hold filaments of living matter, hyperplastic as well as normal cementum being a living tissue throughout. Between the basis-substance and the filaments of living matter, a slow circulation is going on, the liquid carrying nourishment and taking away the effete material.

Thus the pathological changes of a pathological tissue become intelligible, and cementitis of hyperplastic cementum understood.

The reading of this paper having taken till 10 P. M., discussion was postponed until the next session.

Adjourned to 9 A. M.

THURSDAY, AUGUST 5TH.

The meeting was called to order at 9.30 A. M., the President in the chair. The minutes of the previous session were read and approved.

By unanimous consent supplementary report was made from Sec. I, mentioning the processes and appliances of Dr. J. Rollo Knapp, of New Orleans. His porcelain-faced, or all gold crowns, admit of very little criticism, though requiring a skillful and careful manipulator to fabricate them. His very original blow-pipe, which utilizes compressed nitrous oxide with illuminating gas, produces a powerful oxy-hydrogen flame, and promises to be a most useful appliance for laboratory use.

Dr. Knapp being called upon to explain his methods, said that he could add nothing to what he had showed in his clinics. He would be glad to furnish all needful information to those desiring it.

Dr. N. W. Kingsley said it was pitiful to think of the time and

efforts wasted in the old methods of producing the results which Dr. Knapp accomplished with such ease by such simple means. It pleased him to see his own pet methods carried to perfection. His method of producing a metallic die upon which to swage up his crowns is the most simple ever seen, while his compound blow-pipe does its work most beautifully.

Dr. Frank Abbott said he was completely carried away by the simplicity of his methods and the perfection of his results.

Section I was finally passed. The Committee on Credentials reported additional delegates present from the Vicksburg Dental Association, Wisconsin State Dental Association, Fifth District New York Dental Society, Alumni of Dental Department University of Pennsylvania, Northern Ohio Dental Society, Susquehanna Valley Dental Society, Kentucky State Dental Society, New York State Dental Society, Missouri Dental College.

Dr. Pierce, for the Committee on Voluntary Essays, reported two papers received. One had been returned as incomplete. The other was too long to be read as a whole, but the committee recommended that certain portions be referred to the Publication Committee.

Prof. Taft—Thought that if the paper was a good one, the Association should hear it. It was discouraging to persons who had devoted time and labor to the preparation of papers, to have them thus cast aside.

Dr. Kingsleg—Thought it not fair to mutilate a paper. If not accepted as a whole, it should be rejected as a whole, and returned to the author.

Dr. Atkinson—Said that the law of the society permitted the committee to do what they thought right with papers presented to them.

After some further discussion, the report of the committee was accepted.

On motion of Dr. Ingersoll, it was made the duty of the Executive Committee to provide a register for each annual meeting.

DISCUSSION OF SECTION V.—ANATOMY, HISTOLOGY AND MICROSCOPY.

Dr. Atkinson—Objected to the term hyperostosis as applied to the paper read, Hypercementosis being more appropriate to the conditions described. The illustrations he considered the very culmination of drawing. There was much in the paper that was wor-

thy of attention, but there was also much that was mere fuss and feathers. Doctrines were pronounced as settled that were only hypothesis and assumption. It was only an assumption that the predisposition to hypercementosis existed from *in utero*, or that the work carried on was only during the life of the pulp.

It was potentially resident in the tooth-germ, and with new energies we get increased deposits of protoplasm, with deposits of lime-salts to make it visible as we see it. Much of the trouble is due to want of use. We should not ask why, but how?

The microscope reveals *how*, but only after the work is done. We find only the tracks; we don't know what has been there. We say arsenic causes certain results, but the arsenic is only the vehicle; it is the energy behind that causes. Mercury follows the same law; nutrition, also, is operated by the type behind it.

Dr. Thompson—Inquired if there might not be a nodular idiosyncrasy tending to produce such deposits on the bones and teeth?

Dr. Atkinson—Said he had yet to see the first well authenticated instance of hypertrophy or exostosis on a tooth which had never lost its occlusion.

Dr. Wells—Said he had had the proof in his own mouth, in a tooth which Dr. Fuller had extracted.

Dr. Taft—Knew of a case where antagonism was perfect and yet there was a large increase of cementum. He thought, however, that when an inferior antagonizing tooth was lost, the force of gravitation might cause an irritation that would create an abnormal growth of tissue.

Dr. Morgan—While accepting the statements made, thought the inferences incorrect. Any increase of cementum being due to function of the dental membrane, he did not see how it could be affected by the death of the pulp. The teeth being somewhat analogous to the other structures, as in general surgery there is healing by first intention, so where teeth are worn by attrition, in the efforts of nature to repair the loss of substance, filling in the tubuli with lime-salts, the increased sensitiveness of dentine may be due to the increased circulation of these reparative efforts, and not to inflammation.

Dr. Ingersoll—Said that confusion arose from a misconception of the term inflammation, and what it implies. All the phases of inflammation are not manifested in every tissue. Inflammation of

cartilage is as genuine as inflammation of vascular tissue. It has been said that because the blood corpuscles cannot enter the tubuli there can be no inflammation, but that does not follow. Where there is nutrition there is circulation, and with vascular action there may be inflammation. If we accept the theory of inflammation of dentine, this becomes another factor in decay. Dentine and bone are constructed on much the same plan, and in both the medullary tissue may undergo inflammation, in bone the swelling being at the expense of the walls of the cancelli, with consequent softening of bone; in dentine the swelling of the dentinal fibrils is likewise at the expense of the hard tissues. In what we call demineralized dentine, the tubuli are broken down by the expansion of the fibrils.

Dr. Abbott—Said that his conclusions were merely his own opinions, based upon careful observations. He did not believe that increase of cementum could take place unless all the functions of the tooth were in working order. We find the extra growth on the roots of teeth, but we have no means of knowing when it begins. He hoped that enough interest had been excited to induce some one else to take up the work, and prove whether his conclusions were right or wrong.

The subject was passed.

SECTION VI.—PATHOLOGY, THERAPEUTICS AND MATERIA MEDICA.

Dr. Marshall read the report of this Section. They had not expended the \$200.00 assigned them for scientific investigations, but had been engaged in maturing their plans, designing to use it, together with the appropriation for the present year, in the employment of recognized talent and ability, in making a special study of pyorrhœa alveolaris in all its phases—its deposits, exudations, secretions and microbes, with the characteristics of the saliva and urine, etc.

Dr. Hooper read a paper, giving the details of a case of extirpation of the inferior dental nerve. The patient had suffered for years with so-called facial neuralgia, and had had all the teeth extracted with only temporary relief. Since the operation, there had been no recurrence of the pain.

Dr. Hooper also exhibited a large piece of necrosed bone removed from the left inferior maxillary of a boy of twelve years of age, the result of an abscessed tooth which had been allowed to break on the outside, having been treated for nine months by physicians.

He also related the history of a case of supposed cancer, treated by several physicians, and lanced several times, arising simply from a dead pulp in the right central incisor. By proper treatment of the tooth the "cancer" was cured as well as persistent headaches, the deafness being also much improved.

Dr. A. W. Harlan read a paper entitled

BACTERIO-THERAPY.

This paper embodied the results of systematic experimentation in ascertaining the relative value of various antiseptics and disinfectants which, without such determination, are used empirically. The distinction between antiseptics, disinfectants, and germicides or microbicides, was drawn, and the conditions described, which indicate one or the other, or both.

Dr. McMillan, of Kansas City, presented an interesting pathological specimen, the skull of a negro, who had died at the age of fifty-five years, without having ever opened his mouth, having what was supposed to be congenitally anchylosed jaws. He had taken his food through the opening made by missing front teeth.

The subject was passed without discussion.

SECTION VII—PHYSIOLOGY AND ETIOLOGY.

Dr. Storer How read a paper on the practical value to the dentist of Litmus Tests of the Oral Fluids, as aids in determining the causes and cure of dental lesions, and in guiding the choice of filling materials. Through these studies new filling materials might be derived and new reagents discovered.

Dr. A. H. Thompson, Topeka, Kansas, read a paper on Protoplasmic Nutrition and Molecular Metamorphosis in the Dental Tissues.

He spoke of the mysterious powers of differentiation possessed by protoplasm, each tissue selecting from the nutrient stream the particular elements necessary to elaborate, whether nerve or muscle, bone or tooth-enamel, nutriment being carried in and waste carried out, each tissue performing its allotted work in the economy of the organism.

He said that, while it is a mooted question whether enamel should be classed as a vital or exfoliated product, the organic areas of protoplasmic elements which exists in it while the life of the pulp is maintained, prove it to be vital, though when the pulp perishes

the enamel is as dead as hair or hoof cut off from nourishing currents. The pulp selects from the pabulum the organic and inorganic elements required to construct the different tissues of the tooth. The contents of the dentinal tubuli convey nutrition into and waste from its tissue. Throughout the enamel there are areas of living matter also, conveying limited nutrition with corresponding elimination of waste, by means of the connection with the living matter of the dentine at its periphery. This movement is maintained by osmosis, the hunger of the tissue causing it to draw in the pabulum; the more vital and vascular the tissues, the greater being the absorption of pabulum and consequent throwing off of waste. The dentinal tubuli anastomose with the canaliculi of the cementum, the circulation being thus continuous through the two tissues, maintaining some vitality in the dentine, even after the death of its life-source, the pulp. By similar anastomosis, between the dentinal tubuli and the areas of living matter in the enamel, nutrition is also conveyed to the latter tissue, though in less degree.

Molecular metamorphosis is therefore possible throughout the entire tooth structure and its tissues, subject to the pathological conditions of the circulating fluids. Increased density, or calcification in tooth structure, from eruption to adolescence, being admitted (as through the accelerated physiological activity of gestation and lactation), decalcification must also be admitted. In other conditions of ill-health we see teeth that were of good structure for years taking on a condition of softening, something acting through the circulating fluids, disintegrating and carrying off the lime-salts. The bones lose their phosphate of lime, and the brain loses its phosphorus, until a phosphoric famine begins all over the body. Sometimes construction is held in abeyance while waste goes on; or again, construction goes on while waste is lessened. We can observe this in the dentine, and it probably takes place in the enamel also. Where removal of waste in the teeth is not followed by compensating reconstruction, softening of the tissues will result, with loss of resistance to caries. In certain inflammatory conditions the removal of elements is followed by molecular synthesis, the basis-substance as well as the calcific elements being reproduced. The mystery of this molecular work is impenetrable.

Adjourned to 8 P. M.

(TO BE CONTINUED.)

THE FIRST DISTRICT DENTAL SOCIETY OF NEW YORK.

REPORTED EXPRESSLY FOR THE INDEPENDENT PRACTITIONER.

A special meeting of the above named society was held at the rooms of The S. S. White Dental Manufacturing Co., on Tuesday, September 7, 1886, at 8 o'clock, P. M. On account of the absence of the President and Vice-President, Dr. W. W. Walker, Chairman of the Executive Committee, took the chair, and called for incidents of office practice.

Dr. Geo. F. Reese spoke at some length of his method of inserting amalgam fillings. He lines all cavities with oxy-phosphate of zinc, which he mixes rather thin, and inserts in the cavity. Before it sets he presses the amalgam over it, forcing out all surplus oxy-phosphate, leaving only a very thin layer of it. Dr. Reese claims to obtain better results, and no discoloration of the teeth. He inserts gold fillings in the same manner.

Dr. C. S. W. Baldwin said that he had used oxy-phosphate of zinc as a lining for cavities for many years, but becoming dissatisfied with the results, he had now entirely discarded it.

Dr. Wm. H. Atkinson then read the regular paper for the evening, his subject being "The Evolution of Preserving Teeth by Filling Materials and Methods."

He first described the state of the dental profession, the crude instruments in use when he entered it, and after a detailed description of its development up to the present time, he concluded his paper as follows:

"Whether we are nearing the end of improvement in filling teeth or not, we are at least progressing in the order of the inspirational necessities, from early practices through varied experiences of means and methods down to the summation of those in the Herbst method, by using the hand impact and rotation of point in combination, thus securing adaptation of filling to wall of cavities heretofore unattained by any method. The hand may rotate the unpolished end of the filler and effect the work in good shape; but rotation of point in the hand piece of the engine saves time and secures superiority of adaptation, besides being less unpleasant to the patient. In fact, in Herbst's own hand, the pressure of packing the gold was rather pleasurable than otherwise, in my own mouth.

“A glance at what has already been said will reveal the sum of a long and varied trial of means and methods resorted to in attempts to save decayed teeth by filling. No single partial presentment of method can compare with a combination of all the good points in the different methods conjoined in successive adaptation, which I regard the Herbst method as presenting.”

Dr. G. A. Mills related some details of his experiences when entering upon dental practice. He described the crude instruments as well as methods at that time in use for filling teeth. He spoke of the wonderful improvement made since that time, and especially of the inventions of Dr. Herbst.

Dr. C. F. W. Bödecker thanked Dr. Atkinson for his interesting paper, and called attention to a letter published in the September number of the *Dental Cosmos*, in which it is stated that everything which Dr. Herbst claims as his invention had been in use in this country for many years. Dr. Bödecker affirmed that all which Dr. Herbst claimed is original with him, for he is not able to read English, nor does he attend the meetings of dental societies more than once or twice a year. About three years ago, when Dr. Bödecker was in Europe, Dr. Herbst told him of his invention of the steel pen device for holding the gum and rubber dam above the margin of cervical cavities while filling. He fancied that he had made a great discovery, and was very much surprised when told by Dr. Bödecker that there already were a number of special clamps for that purpose.

Dr. Bödecker admitted that many little devices like the one mentioned had been in use in this country for years, but asserted that he believed that the re-invention by Dr. Herbst was entirely original, and that they had not been copied, for the devices of Dr. Herbst indicate their originality. It was very strange that no one had practiced the Herbst method if, as it is claimed, it was known long ago. He advised the gentlemen who proposed to try the new method not to become discouraged, even though their first efforts were failures. It is easily comprehended when demonstrated by any competent operator. He further advised that beginners should not at first attempt to finish their work by the rotary method, but in the last layers use the mallet until experience had made them better acquainted with the manipulation. He thinks that the future will show very many American operators who will make better oper-

ations by the rotary method than can Herbst himself. He announced that he (Dr. Bödecker), would operate by the Herbst system at every clinic, and that he had several promises from other practitioners who are willing to operate by this method at the clinics.

Dr. Bödecker then spoke of the practice of lining cavities with oxy-phosphate of zinc, as mentioned by Dr. Reese. He followed this some years ago, but, like Dr. Baldwin, he had now discarded it. He commended the lining of cavities with gold, as demonstrated by Dr. Herbst at his clinics. He also stated that he had been using Herbst's amalgam lately, and found it excellent. Herbst told him that, according to his experience, the silver, and not the mercury in the amalgam, should be blamed for the contraction as well as for the discoloration.

Dr. Wm. H. Atkinson commended Dr. Bödecker for vindicating Herbst. He said that yesterday he filled a tooth by the Herbst process, and did exactly as Dr. Bödecker advised; he adjusted the last layer with the mallet. He felt that he could vouch for the honesty of Herbst.

Dr. W. G. A. Bonwill spoke at length concerning the condensing of gold by his mechanical mallet, with which he can pack it very fast, as he had demonstrated at the New Jersey State Society meeting, at Asbury Park. He thought that the patient's comfort should not so much be taken into consideration as the time demanded, and claimed that with the mechanical mallet he could insert a filling quicker than Herbst could by the rotary process. He asked Dr. Bödecker why Dr. Herbst used so much hand pressure for the introduction of his gold.

Dr. Bödecker said that Dr. Herbst stated at the meeting of the New Jersey Society, that "If he had been able to condense gold like Dr. Bonwill, he would never have felt the need of another method." There are very few operators who can insert gold as fast as Dr. Bonwill can, but about one-half of this time could be saved if two-thirds of the operation were made by the Herbst method, and the other third by the mallet. The last layers of gold take about as much or more time to put on by the rotary process, as when done by the mallet. Dr. B. further stated that the great amount of hand pressure spoken of by Dr. Bonwill was mostly used in the last layers, and in that particular Dr. Bonwill was right.

PENNSYLVANIA STATE DENTAL SOCIETY.

EIGHTEENTH ANNUAL MEETING, HELD AT CRESSON, JULY 27, 28
AND 29, 1886.

REPORTED FOR THE INDEPENDENT PRACTITIONER, BY WM. H. TRUEMAN, D. D. S.

Concluded from page 567.

WEDNESDAY AFTERNOON SESSION.

A portion of the time was devoted to clinics and to the examination of new instruments and appliances.

Dr. Hamlin Barnes demonstrated the use of his prepared gold for lining vulcanite plates. He urged, where the lining is used, the importance of having, to vulcanize upon, a cast with a surface smooth and free from air bubbles. To obtain this he preferred to prepare the impression by giving it several coats of thin sandarach varnish. If the impression is made in modelling compound, the varnishing must be done quickly or the alcohol may soften the surface. He prepares the plaster for casting the impression by first placing sufficient water in a bowl; into this the plaster is sifted, a little at a time, from a scoop, the bottom of which is made of fine wire gauze, allowing it to settle after each addition. Sufficient plaster having been added, it is allowed to settle, the surplus water poured off and the thin batter poured into the impression, until the face of it is covered; this is jarred to cause it to flow into the depressions, and after it has slightly hardened a batter of greater consistency is added to make the cast of sufficient thickness. He used a slow setting plaster, necessarily, as by this method considerable time is required. The surface of the cast made at the clinic was remarkably smooth and free from air bubbles, but when examined the next day, was too soft for practical use in the laboratory; evidently too much time had been consumed in mixing the plaster, or the batter was too thin to produce a hard, serviceable cast. This might be due, however, to interruptions incident to a clinical demonstration.

The case is flasked and packed in the usual way; to prevent the rubber adhering to the cast, it is covered with an alloy of lead and cadmium rolled to about No. 40, and to facilitate opening the flask, during the process of packing, a piece of thin muslin is placed between the rubber and the cast; this is removed before the flask is finally closed. After the flask is closed, and when in the usual method of procedure it would be ready to be placed in the vulcanizer, the muslin having been removed but the lead foil still remaining in position, it is allowed to cool, preferably in the air, but if time is an object, by immersing in cold water. When quite cold the flask is opened, the lead foil stripped off, any surplus rubber cut off with a pair of scissors, and the prepared gold applied, either to the surface of the rubber or to the cast. In either case it is cut into pieces of suitable size and shape to fit neatly, allowing the edges barely to lap; if the pieces lap too much the edges are liable to rise after the case has been worn, and thus form a rough line; the gold is "patted" into close contact with the rubber, and after the surface is entirely covered the flask is closed and the case vulcanized. As the gold is a trifle thinner than the lead foil, it is better not to quite close the flask until the gold is placed in position. Particular stress was laid upon allowing the flask and its contents to cool before opening to insert the gold. If the flask is opened immediately, there is a tendency in the rubber to draw away from the mould. From this cause, when the flask is again closed, the position of the gold is likely to be changed, the joints between the pieces may be opened, it may be thrown into folds, or even torn over depressions, as was shown by illustrations. The speaker suggested that it would be better, in cases in which tin foil was used simply to give a clean smooth surface to the palatal portion of the plate, to adopt the same plan and defer placing the tin foil in place until the flask had cooled. Care is, of course, needed, to avoid injury to the cast if any portions are weak.

The Partz Electric Battery Company, of Philadelphia, exhibited a new form of battery known as the "Acid Gravity Battery," specially designed for office use. In construction it closely resembles the well known "Gravity Battery." Each cell is composed of an oblong glass vessel seven and one-half inches long, five and one-half inches wide, and seven and one-half inches high. A carbon plate, the upper surface of which is covered with cone-shaped

projections so as to present a more extended surface, fits the bottom of the cell, and into the middle of one end of this is fitted, by grinding, a carbon rod, extending above the top of the cell and forming one pole of the battery. About two inches above the carbon plate is suspended, horizontally, a cast zinc plate; a glass tube, funnel-shaped, extends above the top of the cell, the narrow end, through which there is a small hole, resting upon the carbon plate at the end opposite to the carbon rod. The cell is closed by a wooden cover, the carbon rod, an extension of the zinc plate, and the glass tube passing through suitable openings and projecting above it. The battery is charged with a solution of either an alkaline sulphate, preferably that of magnesia (one pound to two quarts of water), or an alkaline chloride, preferably that of ammonium (one pound to five pints of water), each cell requiring about forty-five fluid ounces. The solution of sulphate of magnesia, while not giving as strong a current as the other salts, is preferred on account of its cheapness and cleanliness. After the cell is charged, a small quantity of salt produced by causing sulphuric and chromic acid to combine, forming an amorpho-crystalline mass, known as "sulpho-chromic salt" (made and furnished by the company), is dropped into the glass tube. In a short time this is dissolved, and the resulting solution having a much greater specific gravity than the solution filling the cell, spreads over and covers the carbon plate. The battery then becomes active and continues so as long as any of this remains. When the battery becomes weak, it is only necessary to add a fresh portion of the salt, dropping it into the glass tube. Four cells operate the electric mallet effectively. The advantages claimed for the battery are its cleanliness, entire absence of any fumes, the non-corrosive character of the solution used, and the ease with which it is kept in working order. The cells do not require cleaning oftener than once in two or three months, the addition of a small portion of the sulpho-chromic salt once a week being sufficient to keep it in order. There is an entire absence of the "chrome alum" deposit, so annoying with the ordinary carbon or Bunsen Battery. Dr. Guilford reported that he had been using four cells to operate an electric mallet, his door bell, and an electric gas-lighting apparatus, for about nine months, during which time the solutions had been changed but once, the only attention it had received being the addition of the sulpho-salt from time to time.

EVENING SESSION.

Dr. C. S. Beck, in relating various incidents of practice, expressed the opinion that a large portion of capped pulps, where there had been actual exposure, especially if that exposure was caused directly by decay, would eventually die. Whenever possible he preferred not to expose a pulp; the softened dentine makes by far the best cap. He had been very much interested and impressed by the recent investigations of Drs. Miller, Black, and others, upon the germ theory and its bearing upon dental caries, and also the part assigned to micro-organisms in causing and maintaining pathological conditions. This had led him to abandon all escharotics in these cases, and to use bichloride of mercury in solutions of various strength, from one that is almost saturate to that of about one grain to the ounce. He used this in various suppurative conditions, and applied it freely to the cavities where, to avoid pulp exposure, he allowed more or less softened dentine to remain. He used a rather strong solution, as he desired to destroy, not only any germs that may be present, but to thoroughly sterilize the parts so that they could not in the future become the home of these destructive organisms.

Dr. Guilford called attention to the strength of the solution of bichloride of mercury recommended; he thought it entirely too strong to be safely used. One part in ten thousand of water was an effective germicide; then why use it so strong as one part in five hundred? It is a most violent poison, and should be used with the greatest care.

Dr. Jack was more hopeful of the result of pulp capping. He had found deposits of secondary dentine in a notable number of cases, and under a variety of methods of treatment. Accidental exposures were far more amenable to treatment. He had treated some cases of quite extensive exposure that had given no trouble. In considering this question we should distinguish cases of mere exposure from cases of diseased pulps, as in the latter, failure was far more frequent. We there labor under a serious difficulty in not knowing the exact condition, or how far the pathological changes may have advanced.

Dr. Klump, in all cases where the exposure was the direct result of caries, preferred thoroughly to expose the pulp. He thought it advantageous to do so for the reason that, in some cases where he had least expected it, after fully exposing he had found the pulp

almost putrescent. Where vitality still remains, if the softened dentine is entirely removed and the pulp fully exposed and carbolized, it will prove successful in nine cases out of ten.

Dr. Guilford said a pulp will not live after any great mechanical or medicinal injury. We should be careful not to apply too strong a remedy. The pulp will not tolerate any space between itself and the capping. Should any exist, it will spread out and strangle the capillaries upon the rough edges. A cap should be close fitting, non-irritating, and thoroughly protective. He thought Dr. Klump's idea a great mistake; nature's cap is by far the best, and softened dentine, sterilized, forms the best protection.

CAVITY LINING.

Dr. S. B. Luckie, of Chester, read a paper having this title. He said that the operation of lining a cavity consists in covering the walls with a layer of some material that will subserve a purpose not expected of the filling. Fillings of gold and of amalgam are more durable than those made of the cements, yet the latter will often preserve a tooth, even after a large portion of the filling has been dissolved or worn away by mechanical forces. The deduction then is that the cements, although more easily destroyed by the destructive agents that come in contact with them, are better tooth conservators than the metals, and that more promising results might be obtained by the conjoined use of both in the same cavity.

Large and deep cavities may be partially filled with one of the zinc cements, a metallic filling being placed over and well anchored into it. In this way the effects of thermal shock may be modified, frail walls supported, discoloring of tooth substance prevented, and the objectionable showing of fillings through transparent walls avoided. In selecting materials for cavity lining, their respective properties should be considered, otherwise the object desired may be defeated. Oxy-chloride of zinc, from its stimulating properties, is desirable for lining teeth of poor structure which contain vital pulps. Its power to stimulate activity in the nutritive currents will produce an excess of the pabulum which nourishes and organizes dentine. On the other hand, if used in excess, or without a protection to guard its initiatory effects upon the pulp, the result will be congestion and death of that organ. The class of teeth in which the danger from chloride of zinc is greatest are those de-

nominated soft, low grade, poor structure, etc. It is in these, also, that its exciting qualities should be most effective for good.

That the stimulating effect may be held in check, exposed or nearly exposed pulps should be protected by some form of cap. A concave disk of tin, readily made at the time it is to be used, answers very well for this purpose if the cavity be filled with a paste of oxide of zinc and oil of cloves or creosote. If it is carefully placed in position, it not only protects the pulp from pressure, but modifies to a great extent the physiological action of the cement. Where the cavity does not approach the pulp the disk may be omitted, the paste of zinc oxide and creosote being a sufficient protection.

When the object is simply to prevent a filling showing through thin walls, and the tooth is of a markedly positive color, the cement may be shaded with a suitable pigment so as to more nearly harmonize with it. Phosphate of zinc possesses attributes that make it a better lining, from a mechanical standpoint, than the oxy-chloride; its ductility allows it to be placed against frail walls with a burnisher instead of cotton pellets, leaving a smooth surface; it is non-shrinking, hardens quickly, and has greater edge strength. It can also be used with safety in teeth with vital pulps; he deemed it important, however, that a protecting layer of some material be placed between it and the pulp in all deep cavities, for although the phosphoric acid may not interfere with the nutrition of the pulp, the pressure necessary for its adaptation might be sufficient to cause congestion.

The advantages of lining cavities with the cements named are, briefly stated, less liability of recurrence of decay, color of tooth sustained when amalgam is used, discolored teeth improved in color, thermal shock modified, and liability of fracture reduced. In cases where the cements are undesirable, thick sandarach varnish, or gutta-percha dissolved in chloroform, has been recommended, and will often be of excellent service.

Dr. Magill doubted whether chloride of zinc, when combined with the oxide as it is in the oxy-chloride of zinc cement, possesses the therapeutic value suggested by the essayist. The mechanical protection it affords can be secured equally well with a far less irritating cement; this being the case, what is gained if all the decay is removed from the cavity, by using chloride of zinc to counter-

balance the risk of its causing serious irritation? If we could accurately diagnose the condition of the pulp, we might in some cases derive benefit from its use, but this we cannot well do. The great advantage of cavity lining, to his mind, is the economy of more expensive material, the saving of time and effort to the operator, and of time, money, and pain to the patient.

Dr. R. B. Cummins, of Blairsville, read a paper entitled

A STUDY IN DENTISTRY.

He considered the subject from the standpoint of a country dentist, and regretted that his isolated position deprived him of that spur or incentive to put forth his best efforts which the competition and association of a large community develops in his city brother. This frequently causes the rural practitioner to fall into ruts, and to conduct his business by routine methods. He referred to the importance of keeping the instrument case and the instruments clean and in good order, the importance of instructing patients in the proper use of tooth-powder and the tooth-brush, etc.

Dr. Magill, referring to the remark in the paper about country dentists falling into ruts, said the question with him was whether we do not all of us fall into ruts. The tendency seems to be to get down to the level of our surroundings. He knew many dentists living in little country towns who had kept well up with the times; they have resisted the temptation to step down to the level of those around them, their ambition having led them to strive to work up. They make excellent fillings, pride themselves upon contour work, use the electric mallet, skillfully insert crowns, and by close attention to business and a thorough devotion to their profession, in many cases build up an excellent and appreciative practice. They gather around them patients who appreciate and are willing to pay as good prices for good work as the city patient.

THURSDAY MORNING.

Dr. W. E. Van Arsdel, of Sharon, read a paper upon "All Sorts of Questions."

He said his field for practice is in a district full of malaria, where quinine is an article of regular diet. He had seen numerous instances where, after the insertion of small fillings in teeth in which no after-trouble should be anticipated, an attack of malaria seemed to be the inciting cause of very decided trouble; in some cases peri-

ostitis, in others death of the pulp and alveolar abscess. Can anything be done to avoid such results? His experience in capping pulps has, for the same reason, been decidedly unsatisfactory, and seems to be but the sure precursor of death. He related the case of a patient whose teeth, originally strong, were being rapidly destroyed, owing, he thought, to the free and constant use of candy. He was a manufacturer of candy, and ate probably a pound a day. He asked what could be done to stop their rapid decay. He had advised the local application of prepared chalk. Is there anything better than that?

Dr. Beck stated that, in cases where from long continued use the system had become so saturated with quinine that it seemed to have lost its effect, he had excellent results from the cautious use of arsenic, in the form of Fowler's solution.

After the transaction of the routine business, the newly elected President, Dr. E. P. Kremer, was conducted to the chair. He appointed the following committees:

Executive Committee—C. S. Beck, Chairman, Wilkesbarre; J. C. M. Hamilton, Secretary, Tyrone; G. W. Klump, W. H. Trueman, S. H. Guilford.

Publication Committee—W. H. Trueman, Chairman, Philadelphia; S. H. Guilford, Secretary, Philadelphia; E. T. Darby, Alonzo Boice, J. R. C. Ward, W. B. Miller, J. C. M. Hamilton.

Committee on Enforcement of Dental Law—W. E. Magill, J. W. Rhone, J. C. Green.

Committee on Legislative Action—C. N. Pierce, G. W. Klump, W. E. Magill, H. Gerhart, J. P. Thompson.

Adjourned to meet at Glen Summit, on the last Tuesday in July, 1887.

THE HERBST CLINICS IN AMERICA.

REPORTED EXPRESSLY FOR THE INDEPENDENT PRACTITIONER.

(Continued from page 582.)

On the evening of Tuesday, July 22d, certain members of the New Jersey State Dental Society gave a dinner in honor of Dr. Wilhelm Herbst and other distinguished visitors. Dr. Fred A. Levy occupied the chair. The dinner, which was given at the Coleman House, Asbury Park, N. J., was a brilliant success in every respect.

the profession. The chairman then proposed a toast to the dentists of New York, and called upon Dr. N. W. Kingsley.

Dr. Kingsley responded, and in concluding his remarks called attention to the fact that that day, the 22d of July, was the sixtieth birthday of Dr. Wm. H. Dwinelle, the announcement being received with great applause.

The chairman then proposed the health of the dentists of Pennsylvania, and called upon Dr. E. T. Darby.

Dr. Darby spoke in a very complimentary way of Dr. Herbst, and hoped that when he returned he would feel that he had the good wishes of every American dentist, as he had been treated here like a professional brother. Dr. Darby then expressed the hope that the dentists of Germany would recognize the fact that the dental profession of this country has recognized in Dr. Herbst a gentleman of modesty, and a genius. (Cheers.) Dr. Darby then spoke of the dentists of Pennsylvania, and especially of Philadelphia, in connection with dental education.

Dr. Levy then proposed the health of the dentists of Maryland, and called upon Dr. R. B. Winder.

Dr. Winder, in his remarks, endorsed all that had been said by Dr. Darby in regard to Dr. Herbst, and then spoke of Baltimore as the cradle of dental education, mentioning at some length the difficulties which Dr. Chapin A. Harris had to encounter.

The chairman then proposed a toast to the dentists of Philadelphia, and called upon Dr. James Truman.

Dr. Truman congratulated the society upon the great success of the evening, and remarked that all he could say to Dr. Herbst he had expressed a few evenings since, at a dinner given him by the dentists of Philadelphia.

The chairman then called upon Dr. O. E. Hill to speak for the dentists of Brooklyn.

Dr. Hill, after responding to the toast, said he was glad that there was such a country as Germany, to produce such a genius as she has sent to us, and he therefore proposed a toast to the dentists of Germany.

Dr. Herbst again thanked the society for the honors shown him, but remarked that he would regard them as compliments paid to professional friends in his own country. He then remarked that formerly dental education in Germany had been very much neglected. A dental student was required to study two years in a college

where everything was taught, *except dentistry*. He remarked that he had graduated under the same curriculum, and when he passed his examination, graduated with honor, but he had, up to that time, not known how a gold filling was inserted in the cavity of a tooth. After that he settled in Bremen, and bought all the latest American instruments, but was unable to make any use of them. When he saw the beautiful work which from time to time came to him from this country, he was stimulated to produce like results in any way he could. He knew the American proverb, "Help yourself," and out of his struggles the rotary method came into existence. He freely declared that if he had known how to insert a filling by the American system, he would never have thought to experiment in this direction, and he is of the opinion that his method in the hands of American dentists would soon be brought to great perfection.

The chairman then proposed a toast to the rising generation of dentists, and called upon Dr. W. W. Walker.

Dr. Walker was pleased to pay homage to Dr. Herbst and his baby (the rotation method), and very glad that he had been elected an honorary member of the New York State Dental Society.

The chairman then proposed a toast to the honorary members of the society, and called upon Dr. Bonwill.

Dr. W. G. A. Bonwill, after saying a few words in response to the toast, remarked that he was glad to see that the Americans honored a foreigner in this way. He regarded Dr. Herbst as a mechanical genius, and he had met only very few of them in the dental profession. In speaking of his method, Dr. Bonwill could not say whether the invention was valuable or not, until he had tried it. From what he had seen he was very favorably impressed, although the method was in direct opposition to his system of operating, but whether the new method would be universally adopted or not it was impossible to say. He then presented Dr. Herbst with one of his dental and surgical engines and mechanical mallet, under the condition that Dr. Herbst will give it as faithful a trial as he himself would the new method.

The chairman then proposed a toast to the New Jersey State Dental Society, and called upon Dr. Hayhurst.

Dr. Hayhurst at some length described the good work which, during the sixteen years of its existence, had been done by the society, and was glad that it had welcomed Dr. Herbst in so cordial a manner.

The chairman then proposed a toast to the other distinguished guests, and called upon Dr. Atkinson.

Dr. Wm. H. Atkinson had heard of Dr. Herbst first through Dr. Bödecker, whose judgment he highly respected, but he had withheld his judgment until he had an operation performed in his own mouth, and by which the truth was revealed to him that the Herbst method stands *par excellence* as the exponent of the law of the adaptation of the gold to the walls of a cavity.

The chairman then expressed the hope that the society might see all the faces again next year, to which Dr. Wm. H. Dwinelle responded, principally confining his remarks to honorable dental practitioners who had passed away, but whose names will live forever. In this connection he mentioned Chapin A. Harris, Elisha Townsend, E. B. Gardette, Eleazer Parmly, Solyman Brown, Jehiel Parmly, and others, after which the meeting adjourned.

CLINIC GIVEN JULY 23D, FOR THE SAME SOCIETY.

Dr. Herbst lined some cavities with gold for filling with amalgam, in the following manner: A large cylinder of Wolrab's gold was compressed between the fingers and dipped into a very thin solution of gum-copal in sulphuric ether, which is used for the purpose of preventing the mercury of the amalgam from uniting with the gold.

When this compressed cylinder has been moistened with the liquid, the surplus is pressed out with the fingers, the ether allowed to evaporate, and then by means of a piece of cotton, the gold is pressed against the labial wall of the cavity in the tooth to be filled with amalgam. The gold in this manner can be thoroughly condensed by means of a rotating burnisher in the engine, and will not alter the shape of the cavity. When ordinary round undercuts have been made, the amalgam will be held in position without any trouble. Dr. Herbst exhibited many teeth which had been filled in this way, several months ago, and showed no signs of discoloration, but presented the most natural appearance, although their labial walls were very thin, so much so that the gold was visible through the enamel. He then explained the making of instruments, matrices and other appliances, such as were exhibited in the trays of his cabinet.

The president, Dr. W. Pinney, then called the meeting to order, and after some routine business had been transacted, the privilege of

the floor was given to Dr. Herbst, who was interpreted by Dr. Bödecker. He said:—

MR. PRESIDENT AND GENTLEMEN, I am very glad to have this opportunity to say a few words which I wanted to express last evening.

Gentlemen, Dr. Bonwill very kindly made me a present of his dental engine and mallet on condition that I shall practice with it and see what can be done, and this I promise to do. But, gentlemen, I say here openly that if I had had the skill and the training that Dr. Atkinson, Dr. Bonwill, Dr. Brown, Dr. Webb, Dr. Varney, Dr. Bödecker, and others, I should never have attempted to invent my rotation method.

I know that by means of the electrical mallet and the Bonwill mechanical mallet you can achieve very great results. I have seen a patient of Dr. Bödecker who had several large fillings that were made with the Bonwill mechanical mallet, which were very beautiful. I do not know whether Dr. Bonwill or any other gentleman here has had the two methods used in his mouth, but I am sure that any one who has will have noticed a very marked difference in the sensation produced; and I think we should consider the comfort of our patients, as well as our own. Even if an operation could be performed with the mechanical mallet, or with the electrical mallet, in about the same time and with as little labor as it can be done by the rotation method, still the patients will be much better satisfied if they are subjected to less pain and annoyance; and you know the mallet always is a more or less disagreeable instrument to experience in the introduction of gold.

I accept the present of Dr. Bonwill with gratitude, and I shall esteem it very highly, especially as the gentleman from whom it comes is known in Germany and Europe as one of the most ingenious and skillful operators in his profession. Therefore, I again thank him for the present he has kindly made me. And again my very best thanks for what this society has done for me, and the reception you have given me. I shall never forget the few days I have spent with you.

Dr. S. C. G. Watkins—Mr. President, Dr. Herbst has said that he would like to hear from some one who has experienced in his mouth both the Bonwill mallet and the Herbst rotary method. The first operation with a stone burnisher that was ever done in

America, I believe, was done in my mouth, by Dr. Bödecker. It was the filling of a cavity in a wisdom tooth, which was very sensitive. The doctor used different mallets, the Bonwill among others, and their effect was very unpleasant; but the rotary motion of this stone burnisher I never felt at all. There was no pain whatever from its use, but the effect of the mallets was terrible. It was a great relief to substitute the rotating blood-stone which Dr. Wheeler, of Albany, had made.

Since Dr. Herbst has been in this country, he has, it seems, absorbed the attention and thoughts of dentists through this section entirely. They have forgotten everyone else in honoring Dr. Herbst. But there is at least one other member of our profession who deserves a great deal of credit for bringing this method to our attention, for bringing Dr. Herbst to this country, and exciting an interest that will doubtless lead to further experiments and improvements. I refer to Dr. Bödecker. I think this society ought to pass a vote of thanks to Dr. Bödecker for the great service he has rendered, and the trouble and expense he has had in bringing this matter to the attention of the profession. Therefore, Mr. President, I move you that this society tender to Dr. Bödecker a vote of thanks, for the very great interest he has taken in bringing this matter before the profession.

The motion was carried unanimously.

Dr. Bödecker, in responding, said: Gentlemen, I am obliged for the sentiment you have expressed, but I believe it is the duty of every dental practitioner carefully to examine, and, if found worthy, to adopt anything that may be of value to his brethren, wherever he finds it, and to preserve and present it to his professional brothers.

I saw this rotation method about two years ago, when it was very nearly on the eve of death. At that time I believed it to be a valuable invention, and that a great deal of good would come from it. So I tried my best to save it to the world. Whatever I have done has been, not for myself or any single individual, but with a view to benefit the dental profession at large.

In response to the remarks of Dr. Herbst, Dr. Bonwill said: Mr. President and Gentlemen, I wish to say that, in return for the gift which I have presented to Dr. Herbst, I have to thank him for a set of his instruments which he has kindly tendered to me, and I

promise him that I will, so far as I know how, use those instruments and test them thoroughly in introducing gold in the manner that he has done in our presence.

I have never doubted that gold could be impacted in this way. Any mechanic who ever saw a piece of tin or sheet iron spun up with a simple burnisher would know at once that the metal assumes a new character, and is capable of welding in that way.

While this method of introducing gold may possibly be much more pleasant to the patient, that is not the only point to be considered; diminishing the disagreeable sensation of the instrument is not the only way to save the patient and to eliminate human suffering. The saving of time also tends to that end, and is of great importance to the operator. While we consider the welfare of our patients, we must not forget ourselves. In reducing the time required for these operations three-fourths, I made a great advance in the way of saving time for the patient as well as the operator.

This rotation method is the outgrowth of a keen, mechanical mind, envired and stimulated as his has been.

I thank Dr. Herbst again for the set of instruments which he has presented to me, and which I will give a fair trial.

Dr. G. Carleton Brown then proposed Dr. William Herbst, of Bremen, Germany, for honorary membership in the society.

On motion, the Secretary was authorized to cast the ballot in favor of Dr. William Herbst, who was declared duly elected an honorary member.

CLINIC GIVEN JULY 26TH, AT THE OFFICE OF DR. BÖDECKER.

Mrs. H—— was in the chair, for whom Dr. Herbst contoured the right lower canine, the cavity involving one-third of the mesial, one-third of the distal and a portion of the cutting edge of the tooth. A shellac matrix, with three pieces of steel spring, was employed during the introduction of the gold. The matrix was made as follows: A piece of shellac, the size of a pigeon's egg, was softened and pressed behind the lingual surface, and a little over the cutting edges of the six front teeth. It was then removed, cooled in water, and two pieces of steel watch spring were inserted by heating them over an alcohol flame, and then putting them between the approximate surfaces of the eye teeth, lateral, and the first bicuspid, and into the shellac in such a manner that the anterior edge

of the spring did not quite come up to the labial surface of the teeth. After these two pieces were inserted in the shellac, the whole of the matrix was replaced and pressed firmly against the tooth, while the steel spring pieces were bent into the desired position. When cold, the matrix was removed, and a third piece of steel spring was adjusted to correspond to the cutting edge of the eye tooth. The matrix was then readjusted and, when cold, taken away again, when all the surplus shellac adhering to the steel spring, as well as that which had been pressed into the cavity of the tooth, was carefully removed by means of cold excavators. Dr. Herbst again called attention to the fact that, whenever shellac matrices with steel springs are used the steel should be perfectly cleaned from surplus shellac, and the first layer of gold ought always to cover the entire surface in such a manner that the rotating instrument will not be able to touch any of it, and thus incorporate it into the first layer of gold.

The cavity, which was very large, required one hour and fifteen minutes' time for the introduction of the gold. The operation was witnessed by Drs. Ben. Lord, G. A. Mills, E. Goertz, C. H. Degenhard, and C. F. W. Bödecker. Dr. Herbst said that this was the first time he had made such a large contour operation in the mouth of a patient with gold, and he was very glad that the operation was satisfactory to himself as well as to everybody present. The gold first used in the operation was Wolrab's gold cylinders, No. 0, followed by annealed strips of No. 30 rolled gold, which adapted itself very beautifully, giving nice edges and an extremely hard and solid surface.

CLINIC GIVEN JULY 27TH, AT THE OFFICE OF DR. C. F. W. BÖDECKER.

Miss ——— was in the chair, for whom Dr. Herbst filled the left upper first molar, the cavity involving the distal, the mesial and the largest portion of the grinding and lingual surface of the tooth. The operation occupied about one hour. Dr. Bödecker, at the same time, filled a left lower second molar, for a private patient, the cavity involving the mesial and grinding surfaces, using the German silver matrix and the Herbst method of filling. The operation required about forty-five minutes for the introduction of the gold. The gentlemen present at this clinic were Dr. Tennison of New York and Dr. G. H. Westlake of Virden, Ill.

(TO BE CONTINUED.)

Editorial.

IMPLANTATION OF TEETH.

Some months since we received from the author, Wm. J. Younger, M. D., of San Francisco, Cal., a pamphlet with the title "Transplantation of Teeth into Artificial Sockets," in which was recounted his experience in forming artificial sockets in jaws which had long lost their natural teeth, and the transplanting of extracted teeth to them. We were aware that sound teeth had often enough been placed in the sockets from which diseased ones had been freshly removed, but this drilling of holes in edentulous jaws and inserting teeth seemed so unscientific, unphysiological and non-surgical, that we were rather amazed at the assurance of the dentist who had calmly proposed such a thing. We were taught that the retention of a tooth in the jaw depended upon the vitality of the pericementum, and how could a hole bored in the bone with a drill be endowed with pericemental life? The idea was absurd, and we had prepared a gentle rebuke for the unscientific presumption of the California dentist. But before the publication of the review of his pamphlet, came letters from reliable Californian friends and correspondents, who avowed that they had seen this done, and with apparent success. In the September number we published one such, but with rather a feeling of compassion for the credulity manifested. This letter was followed by others from candid eastern men, who saw the operation performed during a visit to the Pacific coast last summer. An article was written for this journal by Dr. Julien W. Russell, of Brooklyn, who was one of these, but the whole affair seemed so unscientific that it was withheld, notwithstanding the candid manner in which the subject was presented. We waited for yet further testimony, for the assertion was now made that teeth which had been extracted for some time and which were in a desiccated condition, were thus implanted.

Finally, Dr. Younger came east for the avowed purpose of demonstrating this dental absurdity, and has visited New York, Philadelphia, Boston and Buffalo, in each place exemplifying the operation. We were bound in all courtesy to receive him and give him an opportunity to attempt the feat, for he asked no money of any one; he had no patent gim-cracks to sell, and his clinics were given freely, without pay, and seemingly for only the most com-

mendable of purposes. He was contributing his time and money for what he believed was the good of dentistry, and notwithstanding the fact that we believed him to be mistaken in his theories and irrational in his practice, we were anxious to see what would be the effect of such an operation, and accordingly earnestly invited him to visit Buffalo.

We have been thus, perhaps, unnecessarily candid in reviewing the presentation of the new operation, lest we might be charged with a too ready credulity. Concerning the operations in New York, Philadelphia and Boston, we have no personal knowledge, but we are assured that they so far seem to be successful. It appears, also, to be established by sufficient testimony, that a patient was presented in New York for whom had been implanted a tooth in an artificial socket more than a year previously, and it was impossible to detect any marked differences between it and its natural neighbors.

Of the clinic in Buffalo, given in our own office, upon a patient of our own selection, and in the presence of Dr. Park, professor of surgery in the University of Buffalo, and that of a number of our city dentists, we can speak knowingly. Dr. Younger labored under disadvantages, for, not knowing what was wanted, nothing had previously been prepared for him. The patient was a young man, a student in the medical college. Nearly a year before he had lost a right inferior second bicuspid, and it was proposed to insert a tooth in its place. Not a trace of the socket remained, and there was considerable absorption of the alveolus, which made necessary a tooth with a long crown. None such could be readily found, until Dr. Younger himself visited the office of one who extracts a great many teeth, when, out of a bushel or more of dried up, long extracted dental organs, he found one which the donor said had rested in the dental golgotha for at least three years, among thousands of its foul companions. This was carefully prepared by removing the debris from the pulp chamber and canal, thoroughly disinfecting it with a one to one thousand solution of bichloride of mercury, and filling the root with gutta-percha. It was then left in a warm solution of the corrosive sublimate while the socket was prepared.

This was accomplished by carefully dissecting back the gum, and with a small trephine boring a hole in the alveolus, which was

enlarged to the proper size and shape with burs. The tooth was occasionally tried in the socket to determine the proper direction, size and depth, and when these were secured it was forced down to its proper position and left there, the socket having been previously thoroughly syringed out to remove all debris. Its perfect occlusion was now secured by dressing down the cusps a little, when the case was dismissed. So accurate was the fit that the tooth was held firmly in position by mechanical adaptation alone, and no ligatures or other appliances were used to retain it. The occlusion with the superior tooth was, of course, sufficient to prevent its rising in the socket. No after-treatment was recommended, but the whole thing was left to the care of nature. The operation was dexterously performed, the occlusion was perfect, and the pain experienced by the patient was not greater than that necessary in filling a cavity in a rather sensitive living tooth.

At this present writing the tooth has been in position about a week, and aside from a very little soreness, the necessary result of the wound, there has been no bad symptoms, and the case appears to be progressing favorably. Of course the time is not sufficient to afford any reliable index of what the final result will be, and had we not credible testimony that cases analogous to this have gone on to apparent success for a year and more, it would not be quoted. As, however, the operation is attracting some attention in the profession, we have thought it not out of place to detail the manner of its performance, reserving the right to report further upon this instance at a subsequent day.

If this operation should prove to be a feasible and successful one, it will certainly require the revision of our ideas of physiological law. It must not, however, be understood that we are committed to it, or are fully convinced that it is a practice which may unhesitatingly be commended. We are content to wait further developments. And yet, if a smooth ivory peg may be driven into bone and in time be encapsuled within the tissue, or perhaps united to the circumjacent bone, why is it not possible for a tooth to be made to grow in an artificial socket? We know that the spongy portions of the maxillæ are the most accommodating of the bodily tissues, and will submit to almost any surgical or traumatic interference and yet return to a state of health. We also know that the proliferation of bone corpuscles is not entirely dependent upon

periosteum, but that cavities artificially made in bones will be healed from the bottom by granulation. In numerous instances we have replanted teeth that have been out for many hours, and some of these have remained in good condition for ten years, and are seemingly perfect yet. At the present time there is under our care the case of a boy of eight years of age, whose central incisor was knocked out, and practically remained out, for more than forty hours. The tooth was incomplete in growth, and there was nothing like a finished foramen, the end being open the full size of the root. Yet this was inserted, after proper preparation, and now, three weeks and more after the accident, it appears to be well united and comparatively solid and healthy. But all this is but little analogous to the implantation of foreign teeth in artificial sockets.

Dr. Younger is careful to select teeth the roots of which are apparently covered with pericementum, no matter in what a desiccated condition this may be. He believes in the persistent vitality of this membrane. Although we are aware that membranous tissue differs from most of the other tissues of the body in the readiness with which its presence, even when long dead, is tolerated, as is evidenced by its occasional use in surgery, we cannot believe that it is because it has retained any vitality. This seems to us absurd. That Dr. Younger has made his only failures, according to his own statement, in the insertion of teeth that were without the dried pericemental membrane, may be due to the fact that it may act as a protection to the primary deposition of protoplasmic matter, which finds a resting place in its meshes, and thus acts like the cells of the sponge in artificial grafting.

It would be interesting to determine just what is the nature of the relation of the tooth and bone in these implanted cases—whether a pericemental membrane is formed and the organ held in position in the usual way, or whether there is a solid, bony union. That it is not a merely mechanical adhesion seems abundantly proved, for in some of Dr. Younger's cases the gum has been found perfectly adherent to the neck of the tooth. It is to be hoped that, at some time, some of those implanted teeth that seem entirely healthy may be extracted and critically examined, for we think it must be admitted that a union of some kind has really been established between teeth long extracted and the walls of artificially formed sockets.

"DOCTOR."

Perhaps there is nothing in American professional ethics which strikes the educated foreigner with such utter ludicrousness as the indiscriminate use of the title "doctor." The term is derived from the Latin *Docere*, to teach, and in its proper sense is applied to one who is a teacher, an instructor, a learned man. When it is conferred upon a graduate in law or letters, the recipient is thereby licensed as a teacher. In medicine its use is more general, and it is conferred in course as a legal qualification for the practice of physic. But no one is rightly entitled to its use unless he shall have had the doctorate conferred upon him by a legally constituted school. In most of the countries of Europe, a man who styles himself "Doctor" without having gone through a regularly prescribed course of study and received the proper diploma, is liable to fine and imprisonment for swindling the public. It is an honorable distinction, and the use of the title is jealously guarded.

In this country, however, it is not a title of honor, but is commonly used simply to distinguish a man's avocation. All who follow the healing art, whether regularly or irregularly, honorably or dishonorably, claim to be "doctors." There are horse "doctors," cattle "doctors," and dog "doctors," and in the west we frequently hear of a man who has taken up "doctoring" as a means of livelihood. It need not be said that this is a misuse of the term, and that its practice has, in medicine at least, debased the meaning. The term has, by its vulgar use, become akin to that of "Professor," which is claimed by a majority of the tenth-rate music teachers of the country, by negro-minstrel banjoists, and by colored white-washers, until the most of those to whom rightfully belongs the honorable title disdain to use it.

But the "doctor" is nowhere so flagrantly abused as among dentists. Every fourth-rate, cross-roads, peripatetic tooth-puller, puts "doctor" on his sign and cards, and is exceedingly solicitous of being addressed by that title. It is no longer a name of distinction, and so common is it in application that if a foreigner comes among us who does not hold the doctorate, and who is himself desirous of following the custom of his own country, he is constantly embarrassed by being, on every side, dubbed "doctor," *ad nauseam*.

This is a great country for tinsel titles, but of all the cheap designations that of "doctor" is fast becoming the most worthless.

DR. F. P. ABBOT.

In the decease of Dr. Abbot, of Berlin, who died in Dresden, Oct. 11th, while on his way to Carlsbad, the dental profession of the world sustains a great loss. He was respected and beloved wherever American dentistry is known. During the greater part of his professional life he practiced abroad, and for many years occupied a prominent position in Berlin. By his age and honorable standing he had won the title of The Father of American Dentistry in Europe, and never was a name more worthily bestowed. Nor was it alone as a dentist that he was revered. He was a leader of the American Colony in Berlin, and his home was ever open to his compatriots who visited that city. For years he held regular receptions, at which all Americans who came properly vouched for were welcomed, and these entertainments were eagerly looked forward to by his countrymen in Berlin, for here might be met many people of distinction at home and abroad. Personally, he was one of the most genial and kind-hearted of men, and there are thousands who were his debtors for unnumbered courtesies. Professionally, he always occupied a prominent place, and when accomplished operators were few the fame of Dr. Abbot was widespread, and persons of every nationality might be found in his *salon*, visitors for professional treatment from all lands, attracted by the fame of his successful operations.

Never shall we forget the last time that it was our privilege to meet Dr. Abbot. He was at charming Schlangenbad, in Germany, where he had gone for needed rest and recuperation. We were at Wiesbaden, with his son-in-law, Dr. W. D. Miller, and together we drove across the country, among lovely vineyards and through a fairy valley, along the course of a winding stream. The whole route was a panorama of ever-changing loveliness, and the ride was brought to a fitting conclusion in the terraced amphitheatre of beautiful Schlangenbad.

Dr. Abbot greeted his visitors cheerily and heartily, although he was then suffering from a complication of disorders. The wonderful charm of the man was never more advantageously displayed than in the character of host, and as he that day entertained his friends at dinner he seemed the very embodiment of gentlemanly hospitality. His quiet, easy ways, his evident amiability and sweet, loving spirit, won every heart, and we wondered not that so many

of his countrymen, when in trouble or distress in a strange land, should instinctively seek the counsel and assistance of Dr. Abbot. He has lived out his allotted space, and going hence he leaves behind him a name which exhales so sweet a perfume that its fragrance will long linger with those whom he has left behind.

ANOTHER DENTAL JOURNAL.

With the coming year, R. I. Pearson & Co., of Kansas City, will commence the publication of a first-class monthly periodical, to be called *The Western Dental Journal*. It will be edited by J. D. Patterson, D. D. S., with C. L. Hungerford, D. D. S., and A. H. Thompson, D. D. S., as associate editors.

It will be remembered that, during the last year of the existence of the *Missouri Dental Journal*, it was edited by Dr. Pearson, who was then in dental practice, and his associates were Drs. Patterson and Hungerford. They gave to the profession an excellent journal, and it was a matter of regret when they retired. Since then Dr. Pearson has embarked in dental mercantile business, but his love for dental journalism yet remains. When he determined to found another journal, he naturally sought out his old associates for the editorial work, for they had proved their ability and enthusiasm. Should Dr. Thompson join the editorial staff, he will add materially to the *prestige* of the new journal, for he is known as one of the best writers in the profession.

“Westward the star of empire takes its way,” and Kansas City is no longer upon the frontier, but has become a great inland city, the center of a wide stretch of wonderful country, and the possibilities of its development no man can foresee. It is no longer inhabited by a back-woods community, and its dentists are fully abreast the advance of thought in professional matters. They need a dental journal of their own, and the prospect is that they will have a good one. We shall heartily welcome the new-comer, and hope it will be well supported by those to whose interests it will be devoted.

FRAUDULENT CERTIFICATES FROM GERMANY.

It is a too well-known fact that in the past many unworthy, uneducated men, in some cases without any knowledge whatever of

our language, have come to this country in search of a dental diploma, in the hope, and too often the certainty, of being enabled, in a few months at furthest, to return with the diploma of a Doctor of Dental Surgery, and the colleagues of men of education and refinement. How they obtain the coveted degree from colleges that have always been considered respectable, is a mystery. It is possible that in some instances the College Faculties have been misled by fraudulent certificates furnished by this class of students. In some cases matriculation tickets at German Universities, which can be obtained by any one upon the payment of a small fee, have been accepted as certificates of attendance upon full courses of lectures, while the possessor of these worthless papers may never have attended for a day at the school at which he matriculated. Of late, attention has been called to an institution in Berlin, which has a high sounding name, and to the uninitiated may appear like a regular governmental educational school. If it really has any existence at all, it is nothing but a private school, and the names of none of its directors can be found in the list of regular German dentists. Its diplomas or certificates should not be recognized by any American Faculties. The name of the so-called college is as follows:

Erste Berliner Zahntechnische Schule, verbunden mit Poliklinik für Zahn und Mund-Krankheiten. Inhaber I. Malok.

APOLOGIZING AGAIN.

This is a fifty-six page journal, but so much matter of import to dentists has been offered us that for a number of months past each issue has been enlarged, and yet a number of accepted contributions are awaiting space. The August number contained sixty-four pages of reading matter; the September number had seventy-two, the October number sixty-four, and this is the same size. A number of reports of dental societies are in our hands waiting for room, while some exceedingly valuable articles have been necessarily withheld. The editor cannot compass impossibilities, and can but promise that as fast as possible the favors of the excellent correspondents who have sent to him contributions, shall have the place to which they are entitled.

Current News and Opinion.

DEVIATION OF THE NASAL SEPTUM.

Although the introduction of the laryngoscope, nearly thirty years ago, rapidly developed a new era in the diagnosis and treatment of diseases of the larynx, it is a much shorter time since greater attention has been paid by specialists to affections of the nose and its adjacent parts. In the July number of *The American Journal of the Medical Sciences*, Dr. J. W. Gleitsmann, of New York, in an instructive paper on deviation of the nasal septum, points out the different important functions performed by the nose in the human economy, and the results of interference with these functions. The upper part of the nasal cavity, the olfactory region, presides over the sense of smell, whilst the lower one, the respiratory region, is the normal way for the air during the act of respiration. Interference with this natural channel leads to mouth-breathing with its manifold subsequent evils. When the air passes through the nose, it is not only cleansed and moistened, but it also reaches the lungs much warmer than when breathing is going on by the mouth. Nasal respiration with closed lips further exerts a negative pressure of two to four mercury milligrammes in the oral cavity, by which the tongue is drawn to the hard palate, and the muscular action, maintaining the position of the lower maxilla, greatly assisted. The nose also acts the part of a resonant chamber for the human voice, and nasal obstruction imparts to it the so-called dead character, described in Meyer's paper on adenoid vegetations. Finally, it is due to the anatomical relations of the nose to the eye and ear that cases of catarrhal conjunctivitis and lachrymal fistula frequently heal only when co-existing nasal affections are relieved, and that the latter are, in an overwhelming number of instances, often productive of aural diseases of the severest kind. Aside from the symptoms of nasal stenosis in a greater or less degree, deviations of the septum, Dr. Gleitsmann points out, are apt to cause disfigurement of the face, and also have some relation to the bony structures of the head, which he fully explains. The pathology, etiology, symptomatology and treatment of these deviations is fully discussed.

—*Exchange.*

FROM BEN JONSON, (1609.)

A lady should, indeed, study her face when we think she sleeps; nor, when the doors are shut, should men be inquiring; all is sacred within, then. Is it for us to see their perukes put on, *their false teeth*, their complexion, their eyebrows, their nails? You see gilders will not work but enclosed. They must not discover how little serves, with the help of art, to adorn a great deal.

The Silent Woman. Act I, Scene 1.

A most vile face, and yet she spends me forty pound a year in mercury and hog's bones. All *her teeth* were made in the Black-friars, both her eyebrows in the Strand, and her hair in Silver Street.

The Same. Act IV, Scene 1.

A PROBLEM IN BACTERIOLOGY.

A curious feature in the life-history of disease germs is the sudden virulence they frequently acquire on being communicated to men and animals of differing environments. Bates, in his reports of travels in the upper valley of the Amazon, gives an account of a tribe of Indians, who, though ordinarily free from consumption, suffer terribly from the disease on coming in contact with the whites, these latter being hardy travellers and also free from the disease. The history of Texas or Spanish cattle fever is generally known. Of the cattle raised in Texas, none are ever seen to suffer from this fever. If a cow is taken there the probability is she will die by the time she has her first calf. If the calf is not still-born it is apt to be free from the fever. When Texas cattle are driven north, they communicate the disease very readily to native cattle, though, as has been already said, they may not have the disease themselves, and may seem never to have had it.

But perhaps the most curious manifestations of the influence of disease germs yet mentioned is the communication of "stranger's cold" to the natives of St. Kilda, a small island north of Ireland. The inhabitants, who number about seventy-five or eighty, declare that they invariably have epidemics of "colds" when they are visited by strangers, which happens two or three times a year. The island of St. Kilda embraces less than five square miles and the inhabitants have married in-and-in for perhaps one thousand years, never having numbered more than three hundred souls at any one time. After this long history of intermarriages, they are said to be singularly free from mental and physical defects, the only peculiarity exhibited being this susceptibility to cold, as above mentioned, and a tendency on the part of the children to die of trismus nascentium, full fifty per cent. of the new-born dying from the latter cause.

These curious facts form a portion of the store of knowledge which must be gathered and collated before philosophers can give us a comprehensive and satisfactory system of bacteriology.—*American Practitioner and News*.

MASSACHUSETTS DENTAL SOCIETY.

The twenty-second annual meeting of the Massachusetts Dental Society will be held in the Y. M. C. A. building, corner Berkeley and Boylston Streets, Boston, on Thursday and Friday, December 9 and 10, 1886, commencing at 11 o'clock Thursday morning.

A collation will be served at the close of the afternoon session on Thursday, to which ladies are invited, and the evening session will be held in the dining-hall. Tickets for collation will be 75 cents each, and members are requested to notify the Secretary of the number they desire.

Programmes of the meeting will be sent later. Members are requested to give immediate notice of any change of address, that the copy may be prepared for the printer.

G. F. EAMES, Sec'y, pro tem

62 Trinity Terrace, Boston.

COCAINE AIDED BY ELECTRICITY TO ACT AS LOCAL ANÆSTHETIC.

O! thou glorious drug; what virtues dost thou not possess! Truthfully, after a time it will be easier to enumerate the virtues wanting to, than those possessed by cocaine. It is well known that the simple application of a cocaine solution upon the sound skin has no anæsthetic effect. This may, however, be brought about, according to Dr. Wagner, of Vienna, by combining an electric current with the cocaine. It is known that the electric current has the property of causing the forward movements of fluids which are contained in capillary tubes—this is called the cataphoric force or effect of the electric current. If the electrodes of a battery are moistened with a solution of cocaine, it has been found that the latter is propelled into the cellular tissue, causing the skin to become anæsthetic within a few minutes, so that it may be punctured with needles or cut with knives, without causing any sensation or feeling of pain. Any desired amount of skin surface may in this manner be made anæsthetic. The anæsthesia lasts ten to fifteen minutes, but may be prolonged by applying an Esmarch bandage previous to the application of cocaine. This is a most frequent suggestion, and we would be glad to publish any experiences that our readers may have in this line.—*The Medical and Surgical Reporter*.

THE NATURE OF THE PERICEMENTAL MEMBRANE.

In an article on “Exostosis,” read before the Connecticut Valley Dental Society and published in the August number of this journal, we inadvertently misstated the theory of the nature of the peridental membrane as held by Dr. L. C. Ingersoll, transposing his views and those of the English school of fifty years ago. Dr. Ingersoll’s position is that the membrane is dual, but that the layer on the cemental side is essentially different from that on the osseous side—that the two “layers,” “parts,” “varieties,” have nearly the same origin—that one originates in the osseous system, and the other in the dental system, within the dental follicle, in the family of the dental tissues, and that in no sense is one part a doubling of the other part, or a reflection of either part back upon itself—that the duality is entirely of another sort—that while they are different in many other respects, they are chiefly different in their structures and in their *origin*—that they come from opposite directions and unite in the socket—that they are cotemporaneous in their development from the necessity of a cotemporaneous development of tooth-socket and tooth-root.

ACCORDING TO THE STATISTICAL REPORT of the Registrar-General of Great Britain, death plays greater havoc in the ranks of physicians than in those of any other profession. Here are the figures, giving the death rate per 1000:

Clergymen.....	15.93	Physicians.....	25.53
School Teachers.....	19.90	All occupations.....	22.83
Lawyers.....	20.22		

Thus it appears that doctors not only furnish more victims than the members of any other profession, but their mortality rate is above the average of all trades and professions put together.

CLAUDIUS ASH & SONS, of London, England, the well-known manufacturers of dental materials, have, as may be seen by reference to their advertisement in this number, definitely determined to enter the American market, and have established a branch house at No. 30 East 14th Street, New York City, under the charge of Mr. C. A. Sykes, their genial representative who made so many friends in this country last year. It is unnecessary to speak concerning the reputation of this house. For many years it has occupied a leading position, honestly won and sturdily maintained. Gradually their business has extended until it has branch houses in Liverpool, Manchester, Paris, Berlin, Vienna, Hamburg, Copenhagen and St. Petersburg. Heretofore the high American tariff upon goods of foreign manufacture has kept them out of this market, but they now find that they can pay the duties levied, and still compete with our own manufacturers in many things which are sold at much lower prices in England than in America. Their settling here will be an advantage to the profession, for their competition will be a wholesome one, and the excellence of their manufactures will give to American Dentists a yet wider variety of first-class material to select from.

ACCORDING to the *Wiener Medicin Blätter*, the inhalation of amyl nitrite is a reliable and rational antidote to cocaine intoxication. Its action is physiologically demonstrated by the fact that the action of cocaine on the vessels is contractile, and that of amyl nitrite dilative.

A case is reported, in which, for the purpose of painlessly extracting a tooth, six drops of a 20 per cent. solution of muriate of cocaine were injected between the gums and the alveoli. The amount of cocaine was therefore only 0.06 grams, but nevertheless, after the tooth had been removed, intoxication and insensibility set in. After several inhalations, from a cloth upon which were put three drops of amyl nitrite, the senses returned. Complete recovery resulted only, however, after repeating the inhalations for a number of times.

This treatment is more strongly recommended from the fact that the after-effects observed in poisoning by cocaine, such as loss of appetite, emesis, sleeplessness and weakness, are not apparent after the use of amyl nitrite.

—*Pharm. Rec.*

AT THE RECENT OPHTHALMOLOGICAL CONGRESS in Paris, M. Paul Retard described a number of cases in which dental affections were evidently the cause of ocular disturbance, such as glaucoma, amaurosis, amblyopia, and cloudy vision. In asthenopia, without any apparent cause, the teeth should always be examined. M. Gayet mentioned a case in which disturbance was produced by a tooth fixed on a pivot: the symptoms appeared and disappeared according as the tooth was removed or replaced. M. Fieuxal had observed so many of these cases of correlation between ocular and dental affections that he had urged that a dental clinic be annexed to the *Quinze Vingts* Hospital for blind people. M. Suarez and M. Galezowski mentioned similar facts. M. Javal mentioned a series of cases of an inverse order, in which dental disturbance disappeared after operating for glaucoma.—*London Medical Record.*

SOME OF THE ANSWERS reported by the English Inspectors of Schools as having been given to special questions are exceedingly unique, and might perhaps be studied with profit by some of our dental physiologists. To the question "Describe the process of digestion," one of the "presented" pupils answered as follows: "Food is digested by the action of the lungs. Digestion is brought on by the lungs having something the matter with them. The food then passes through your windpipe to the pores, and passes off your body by evaporation, through a lot of little holes in the skin called capillaries. The food is nourished in the stomach. If you were to eat anything hard, you would not be able to digest it, and the consequence would be, you would have indigestion. The gall-bladder throws off juice from the food which passes through it. We call the kidneys the bread-basket because it is where all the bread goes to. They lay up concealed by the heart."

Another answer to the same question was this: "Food is digested when we put it in our mouths, our teeth chews it, and our tongue rolls it down into our body. We should not eat so much bone-making food as flesh-forming and warmth-giving foods, for if we did, we would have too many bones, and that would make us look funny."

On ventilation, one of the students informs us that "a room should be kept at ninety; in the winter by a fire, and in summer by a thermometer." Another says: "A thermometer is an instrument used to let out the heat when it is going to be cold."

"IN THE CLAUDIAN-JULIAN FAMILY, beginning with Julius Cæsar himself, and ending with Nero, we have an almost unbroken line of neuroses. Cæsar himself was epileptic, but probably the disease developed late in life, from exposure and excesses, and did not much affect his health.

"Augustus, his grand-nephew, had, it is believed, writers' cramp; Julia, his daughter, seems to have been little more than a nympho-maniac. She had an imbecile son. Tiberius was a man naturally heartless, cruel and licentious. In his later years he seems to have lost all moral sense, and illustrated the most shameless sensibility and cruelty. Caligula, reputed great-grandson of Augustus, was epileptic as a boy, badly formed and weak-minded as a man. He stuttered, was insomniac, and apparently had hallucinations. Claudius was also weak-minded, timid and credulous, with unsteady gait, weak knees, shaking head and dribbling lips — *New York Medical Record*.

THE PRESIDENT of the French nation, Grevy, now nearly 80 years of age, lost his first tooth the other day. The Paris journals mention the fact as an event, and *The Voltaire* regards it as a matter of grave political importance. "Good teeth" says *The Voltaire*, "are essential to good digestion, and bad digestion has played a great role in the history of kings and rulers. It is lucky for us that President Grevy has such sound teeth. To that fact must be attributed his unchanging calm, his ataraxy, the perfect equilibrium of his physical and intellectual functions, which have made him the most prudent of statesmen and the most constitutional of presidents."

YOUNG DOCTORS, there is no help for it; you must practice on us of the laity before you can become really practical physicians. We will protect ourselves as long as we can. While the "old doctor" lives and is available we will, if we get sick, send for him. When we can do no better, we will send for you. Don't worry at this; it must be so; it is our only defense; you will have your revenge soon enough. The old doctor will die some day, or he will be too busy to come; something will befall us; the attack will be as sudden as severe; we must have your help or none. We may have laughed at you, and in our folly may have vowed that we would not send for you to treat a sick dog: but for all these follies of ours we will with desperate resolution send for you, trusting to a merciful Providence to help us through. (And we will trust Providence the more readily when we see even the young doctor as badly scared as his patient, at the bedside.) If we die you can explain it; if we get well we will sound your praises, even if we are slow in paying your fee.

If you kill a good many of us while really learning the practical part of your business, don't take it too much to heart, or throw your sign in the well, as Dr. Sims did after killing two or three patients.—*Atlanta M. and S. Journal*.

A REPORT on the newspapers of the world has recently been laid before the Imperial German Diet. It would appear that there exist 34,000 newspapers, the total issues of which, during the year, amount to 592,000,000. Of these, 19,000 papers appear in Europe, 12,000 in North America, 775 in Asia, and 609 in South America. 16,500 are in the English language, 7,800 in German, 3,850 in French, and about 100 in Spanish.

New York City is the great newspaper centre of the western hemisphere, as is indicated by the following table:

Daily morning papers.....	21	Semi-monthly papers.....	19
Daily evening papers.....	8	Monthly papers.....	168
Semi-weekly papers.....	7	Bi-monthly publications.....	4
Weekly papers.....	216	Quarterly publications.....	19
Bi-weekly papers.....	11		
		Total.....	473

DR. LOUIS ARNDT, of Jersey City Heights, when about to flask a piece for rubber work, fastens the center of a small, stout cord to the wax of the base on one side, carries it around the case and allows the ends to project from the flask. When the plaster has been poured and is partially set, the ends are carried back to the opposite side, drawing the cord through the plaster, thus cutting the investment into halves and allowing the two parts of the flask to be separated. Time is thus saved, and the use of shellac, oil, etc., becomes unnecessary.

A PARAGRAPH in the last number of this journal stated that the director of the United States Mint reported that the amount of gold consumed for dental supplies was \$39,900, and silver \$6,735. This is probably the amount that was withdrawn from the government depositories for this purpose. It could not cover the whole amount of the precious metals that are used by dentists.

THE "IDEAL BRUSHES," as attested by Dr. Barfield, to all who have used them, have proved "*Worth Their Weight in Gold.*"

In treatment of "Pyorrhœa Alveolaris" the extra-soft Prophylactic has been found of inestimable value, while the Dental Plate Brush is so essential that once used it becomes a necessity to both dentist and patient.

DR. F. A. GREENE, of Geneva, N. Y., avoids the dark lines in gum sections of rubber work by packing a piece of pink rubber in the joints. Cements, he says, dissolve out in time, leaving a space for the collection of fermenting food. By leaving the joints a little open, sufficiently so to draw a piece of paper through, there is no danger of cracking the sections.

IT IS OFTEN desirable to match shades in teeth at night, and this has heretofore been deemed impracticable. But if the teeth to be compared are viewed through the flame of a gas burner, or lamp, it will be found that all the varying shades become plainly perceptible, and in this way they can be selected with as much certainty as by daylight.

C. A. TIMME & Co., dealers in dental goods, Hoboken, N. J., desire us to announce that their senior partner has just returned from Europe, with new appliances and materials of great interest to the profession, which will, no doubt, be fully set forth in their advertisement hereafter.

DR. CARL SEILER says that some persons have a defect of smell analogous to color blindness. One person finds that violets smell like garlic, everything else smelling normally.

PHOSPHOR-NECROSIS of the jaw is becoming quite common in England, in consequence of popular self-prescriptions of phosphorus as a brain renovator.

—*Med. and Surg. Reporter.*

PATIENT: "Well, doctor, what do you call it?" Doctor: "Progressive paralysis." Patient's wife: "Is it anything like progressive euchre, doctor?"

A CHINESE EDITION of "Gray's Anatomy," prepared by Dr. John Dudgeon, who has resided in China for over twenty years, has lately been published.

MORTALITY AMONG PHYSICIANS under the age of thirty is higher than that of any other profession during the same period of life.

DR. E. S. NILES, of Boston, has removed his office and residence from No. 136 to No. 241 Boylston Street, Copley Square.

OF THE fifty-five signers of the Declaration of Independence, five were physicians.

CHICAGO has eight medical journals, seven medical colleges, and six medical societies.

FOR PERSISTENT HICCUGH give a pinch of snuff, and thus induce sneezing.

THE Independent Practitioner.

VOL. VII.

DECEMBER, 1886.

No. 12.

Original Communications.

NOTE.—No paper published or to be published in another journal will be accepted for this department. All papers must be in the hands of the Editor before the first day of the month preceding that in which they are expected to appear. Extra copies will be furnished to each contributor of an accepted original article, and reprints, in pamphlet form, may be had at the cost of the paper, press-work and binding, if ordered when the manuscript is forwarded. The Editor and Publishers are not responsible for the opinions expressed by contributors. The journal is issued promptly, on the first day of each month.

PYORRHŒA ALVEOLARIS.

LECTURE BEFORE THE CLASS OF THE NEW YORK COLLEGE OF DENTISTRY,
SESSION OF '85 AND '86

BY ALFRED R. STARR, M. D., D. D. S., NEW YORK CITY.

(Concluded from page 405)

The pathological changes in pyorrhœa are mainly such as may be readily seen or appreciated by the observer, and hence may also be classed as objective symptoms. In the acute form, or that due to the presence of foreign bodies (other than deposits of tartar), we have swelling and inflammation of the gums, ulceration of the gums and pericementum, exudation of pus, absorption of the alveolus, loosening of the teeth, etc. The process is usually a rapid one, and the symptoms so severe as to require immediate treatment. Owing to this fact the acute variety seldom makes much headway, for

when the cause is removed the disease rapidly subsides. It is possible, though hardly probable, that a foreign body in the alveolus might excite so little irritation and remain so long as to cause a subacute inflammation of the pericementum, the formation of sanguinary calculus and the development of a chronic form from an acute case. I have known misplaced wedges of rubber, wood, or cotton to work down into the alveoli and excite an inflammatory action closely simulating true alveolar abscess. In a doubtful case I have even drilled into a tooth which presented the appearance of having a devitalized pulp (owing to its naturally dark color being increased by the presence of several amalgam fillings), and, on getting through the filling, struck sensitive dentine. Of course this was a signal to stop. The cold water test then proved that the sensitiveness was normal, and not due to pressure. On looking around for the cause of the abscess, I found in the alveolus of the affected tooth, or well down between it and the adjoining one, a small rubber wedge, which had been inserted two or three weeks previously, and was supposed to have fallen out. It produced only slight irritation at first, but soon developed marked inflammation and abscess.

The pathological changes in the idiopathic or chronic form are as follows: The first indication met with is a slight thickening or tumefaction of the margins of the gums, and this may be followed by nodular growths or spongy excrescences. There is a solution of continuity between the gums and the teeth, and then between the pericementum and the teeth. The separation of the pericementum begins at some portion of the neck of the tooth and extends gradually toward the apex. According to some of those who believe in the constitutional origin of this disease, the ulceration and separation of the pericementum is supposed to be due to an atrophic dyspepsia of the connective tissue; according to those who favor the germ theory, this phenomenon is attributed to the inroads of fungi. Other theorists attribute it to the irritation caused by salivary calculus; still others ascribe it to the result of primary or secondary catarrhal inflammation of the gums. With the exception, perhaps, of the last mentioned theory, it is possible that any one, or all, of these conditions may be instrumental in causing the characteristic lesion of this disease. I do not believe, for several reasons, that the process is really a catarrhal inflammation *per se*.

1st.—Because the tissue for which the disease seems to have a special predilection and upon which it exhibits its chief characteristics is not the mucous membrane, but the *pericementum*.

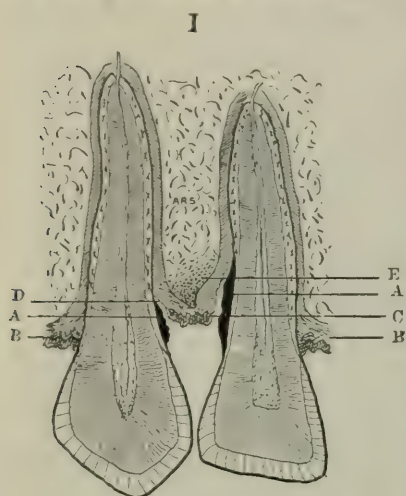
2nd.—Because the inflammatory process is so localized, and ulceration and discharge occur only at the points of connection with the teeth, and not upon the free surface of the mucous membrane. True, these parts are the ones subjected to the greatest amount of irritation, but the point I wish to make is, that we often have the same amount of irritation and apparently the same inflammation of the gums in cases of simple salivary calculus, without having the characteristic lesion of *pyorrhœa alveolaris*.

3rd.—Because the periosteum of the bone itself (outside of the sockets) is not involved.

4th.—Because we never have the deposition of lime-salts on the alveoli.

5th.—Because we so seldom, if ever, have necrosis of bone as a result. I know that this latter statement conflicts with the teachings of most of those who have written upon the subject: but in my experience I can only recall one case in which I could detect the presence of dead bone. Even in that instance I was in doubt as to whether the necrosis was the result of this disease, or whether there had been an abscess to cause it. If we had necrosis we would have bare bone and final exfoliation, but I think you will rarely, if ever, find such conditions as a result of *pyorrhœa alveolaris alone*. I believe the removal of the alveolus is done by a process of absorption, and not of necrosis. If you will examine a case in which the disease is well advanced, and pass a blunt excavator between the gum and the tooth, you will find that the gum is still adherent to the surfaces of the alveolar process; or if the gum be removed from between the teeth, that the fibrous covering of the bone still remains, and you will also find that the *pericementum* has not been detached from the remaining portion of the alveolar wall. If the source of nutrient supply was from the tooth to the alveolus, or if the lime-salts were deposited upon the alveoli instead of upon the teeth, then we would expect to find the alveoli necrosed; but we know that the opposite conditions prevail, and in the great majority of cases we will find that the fibrous covering of the alveolus is *not* removed, and the bone is *not* exposed or necrosed. I believe the pathological changes are, essentially, the following:

Assuming that we have a local irritation resulting in ulceration of the gums as a starting point, and that there exists a constitu-

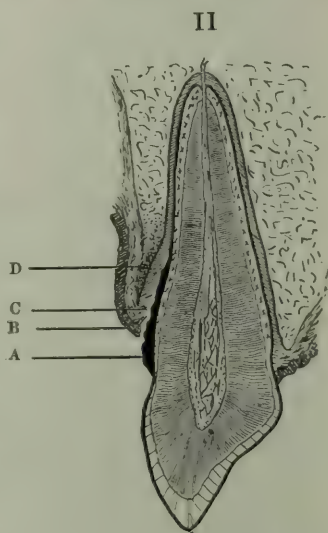


Section through canine and lateral, showing conditions supposed to exist in the earlier stages of the disease. A, Tartar; B, Tissues at neck of tooth in normal condition; C, Gum slightly receded; D, Pericementum detached from the tooth, but not from the alveolus; E, Medullary tissue.

tional tendency to the disease, this irritation extends to the pericementum, and the osteoblasts, which form a layer next to the cementum, are incited to cause the deposition of lime-salts. This deposit serves to increase the irritation and inflammation, and the neighboring cells (osteoblasts) are also involved. The pericementum is thus gradually removed from the tooth by an ulcerative process, but is not detached from the alveolus. (See Fig. I.) That portion of the alveolus, thus covered by pericementum which has been detached from the tooth, no longer having any function to perform in giving nourishment and support to the tooth (through the intervention of the pericementum), is absorbed. This absorption, I think, occurs in the same manner, and for the same reason as when the tooth is extracted.

The fibrous tissue of the gums remains in contact with the alveolar processes, or the periosteal covering with which it is normally united. The gums collapse and recede as the alveoli are absorbed. The gums do not, however, recede to an extent corresponding with the amount of absorption of the socket. While the bone recedes, I believe the gums and pericementum approximate as the medullary tissue between them is removed. (See Fig. II.) If we examine a case in which the disease attacks the proximal surfaces of the roots, in many instances we will find that, while the bony septum is much absorbed and has receded to quite an extent, there is still a fibrous

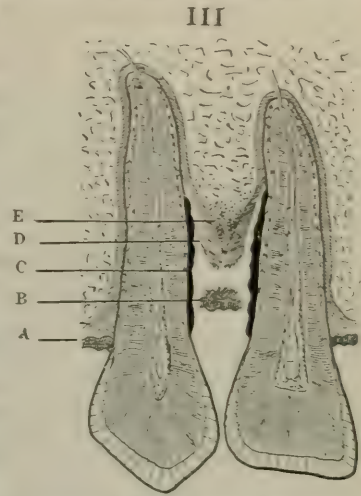
tional tendency to the disease, this irritation extends to the pericementum, and the osteoblasts, which form a layer next to the cementum, are incited to cause the deposition of lime-salts. This deposit serves to increase the irritation and inflammation, and the neighboring cells (osteoblasts) are also involved. The pericementum is thus gradually removed from the tooth by an ulcerative process, but is not detached from the alveolus. (See Fig. I.) That portion of the alveolus, thus covered by pericementum which has been detached from the tooth, no longer having any function to perform in giving nourishment and support to



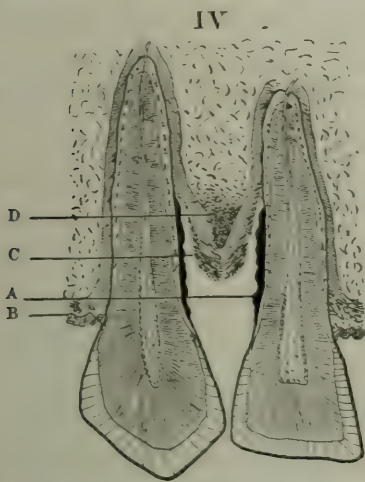
Section of upper canine. Tissues normal on palatal aspect. Pyorrhœa alveolaris on labial side. A, Tartar; B, Gum which has receded slightly; C, Pericementum separated from the tooth and presenting an ulcerating surface; D, Medullary elements of the receding bone.

partition between the teeth, connected on the one hand with the gum, and on the other with the alveolar septum, which partition is probably made up of the two layers of hypertrophied pericementum, between which we will find the medullary tissue into which the bone is changed as the lime-salts are removed.

The ulcerative process may cut through this fibrous partition, and we then have a sort of bridge of gum tissue in the interdental space. (See Fig. III.) This bridge of gum tissue may atrophy or ulcerate, and we then have, on the outer and inner aspects of the teeth, an irregular line of gum, having thickened margins and sending no prolongations between the teeth. When in this condition the gums frequently present spongy excrescences or nodular prolongations at the points opposite the interdental spaces. If we could examine such a case microscopically, we would expect to find the



Section, through canine and lateral, showing absorption of bony septum, leaving bridge of gum tissue in interdental space. A, Tissue at neck in normal condition; B, Bridge of gum tissue cut horizontally; C, Tartar; D, Pericementum—thickened and inflamed—separated from tooth, but still adherent to alveolus; E, Medullary tissue.



Showing great recession of bony septum and absence of true gum tissue from interdental space. A, Tartar; B, Tissue on opposite side in normal condition; C, Thickened periosteum and pericementum enclosing; D, Medullary elements.

component parts of an interdental septum to be such as are depicted in Figure IV, the periosteum and the two layers of pericementum enclosing the medullary elements of the receding bone. In very acute cases the ulcerative process may result in exposure of the bone, but this is the exception rather than the rule.

It is said that we may have localized dissolution of the pericementum and the formation of calculi material in enclosed pockets, but this is still a matter of controversy. In some cases the irritation of the calculi material on the roots (which, according to Prof. Abbott, is always present in this form of the disease) may excite a cellulitis in the neighboring gum tissue, and the formation of a real gum-boil or false alveolar abscess results.

Pockets are formed between the gums and the teeth by the ulceration of the pericementum and absorption of the alveoli, in which pockets food is liable to lodge and increase the irritation. Saliva is also apt to get into these pockets by capillary attraction, and depositing its lime-salts, increases the calcular accretions and intensifies the disease. There is some discharge from these pockets; first serous, then purulent, and finally sanious or ichorous.

We may have secondary catarrhal affections of the antrum or nose. The disease may spread from the alveolus of one tooth to the adjoining ones. We may have separate teeth affected on opposite sides of the mouth, or on the same side, and the intervening teeth may be free from its ravages; while in other cases all the teeth may be affected. It is rather the exception than the rule to have the entire circumference of a root involved. Assuming the root to be quadrilateral, we will usually find that it is affected on one side, or two or three at the most.

The subjective symptoms, or those appreciable to the patient, may be classed as local and constitutional. In the acute or traumatic form the local symptoms predominate, the disease being usually of such short duration that general symptoms rarely supervene. The local symptoms of the acute form are, first the turgid and irritable feeling of the gums, pain, swelling and throbbing sensation when an abscess is developing, tenderness and looseness of the adjoining teeth, and the patient may be aware of a sanious or purulent discharge from the seat of injury. The local symptoms of the idiopathic or chronic form are somewhat similar, though less intense. There is the same turgid feeling of the gums or sensation of fullness, and there may be some redness along the line of contact with the necks of the teeth. The gums are irritable and bleed easily, and the hemorrhages may be so frequent and severe as to excite alarm. The soreness is increased by new deposits, and diminished by occasional depletion from the congested gums, or by the removal of the deposits. The gums may recede somewhat as the disease progresses. The affected teeth are tender, and soon become loose. The patient may suffer from neuralgic pains. There may be a profuse sanious or ichorous discharge of a very fetid odor. The absorption of the alveoli frequently results in gradual displacement of the teeth and marked deformity. The disease may

progress very slowly, affecting first one tooth and then another, of all the teeth may be affected at the same time. These chronic cases, in some instances, may last for quite a number of years before resulting in the loss of the tooth or teeth.

If the disease be severe and long-continued, and especially if many teeth are affected, general symptoms are apt to supervene. In such cases there may be loss of appetite and disturbances of the whole digestive apparatus. The patient may have indigestion, coated tongue, foul breath, acid eructations and diarrhœa. He becomes debilitated, and may have headaches, neuralgic pains in the eyes and ears, melancholia or hypochondriasis.

The diagnosis of the acute form is not difficult except when we have the condition simulating true alveolar abscess. In such cases we have to determine whether the affected teeth are alive or not. If they are alive and we can find no tartar on the roots to account for the disturbance, we must make search for foreign bodies, projecting fillings, or any source of irritation.

The diagnosis of the idiopathic or chronic form is not difficult with the exception, again, of those cases in which we have the formation of false abscess. In ordinary cases the congested gums, slight recession of the gums, separation of the pericementum and absorption of the alveoli, the presence of sanguinary calculus, the formation of pockets, loosening of the teeth, the exudation of pus, or a sanious discharge on pressure, etc., will give ample evidence of the nature of the trouble. In those cases in which we have the development of false abscess, we must use great care in differentiating between this and the ordinary variety of alveolar abscess. Notice carefully the color of the tooth or teeth, use the electric mouth lamp in doubtful cases, apply the cold or hot water test, and search carefully for the presence of tartar or other foreign bodies. The presence of tartar on the roots would not be a sure indication that the case was one of false abscess, but its absence and the absence of any other foreign body would indicate pretty clearly that the case was one of true alveolar abscess, due to the presence of a devitalized pulp. We must be very confident of our diagnosis before undertaking radical treatment.

The treatment of the traumatic form is mainly local, the disease being usually of such short duration that constitutional treatment is rarely required. The indications are to open the abscesses if

there be any, remove deposits or foreign bodies, syringe well with antiseptics, and leave the rest to nature.

In the idiopathic or chronic form the treatment is both local and constitutional. Dr. Rawls says: "There is but one principle upon which all local treatment should be based, viz., that new tissue will not grow upon dead tissue. In other words, broken-down nutrient continuity must have protection against substances inimical to the establishment of embryonic tissue." The first thing to be accomplished is a thorough removal of all foreign materials from the teeth, as far as the pericementum has become detached.

In those very rare cases in which we have necrosis of the alveolar processes, remove as much of the devitalized portion as you can. During the operation, and after removing the deposits and getting the roots as smooth as possible, syringe the pockets with an antiseptic solution. For this purpose we may use carbolic acid (1-100), peroxide of hydrogen (diluted one-half), tartrate of chinoline (1-40), listerine (pure or diluted to one-half or one-third), chloride or sulphate of zinc (grs. X to \bar{z} i), or aromatic sulphuric acid (pure or diluted one-half). I have found a combination of tannin and glycerine (tannin \bar{z} i and glycerine \bar{z} i) of some value as an astringent dressing for the pockets. I am indebted to Prof. Abbott for the following prescriptions, which will be found very useful in the treatment of this disease:

R

No. 1.	Morphia, Sulphat,	gr. iv.
	Acid, Carbolic.	
	Acid, Tannic,	aa 3 ss
	Glycerina.	
	Aqua, Distil.	aa \bar{z} ss

M.

Sig.—Apply on a pledget of cotton to the diseased parts, or use with a syringe or spray apparatus.

R

No. 2.	Acid, Carbolic.	
	Acid, Tannic,	aa 3 ss
	Glycerina.	
	Aqua, Distil.	aa \bar{z} ss

M.

Sig.—Same as for No. 1.

R

No. 3.	Acid, Carbolic.	
	Acid, Tannic.	
	Tinct. Iodin.	aa 3 ss
	Glycerina.	
	Aqua, Distil.	aa 7 ss

M.

Sig.—Same as for No. 1.

Number one is to be used when there is much pain attending the inflammatory process; number two, when we wish simply an astringent and antiseptic effect; and number three, when we want a more stimulating effect, as may be necessary in long-standing or intractable cases. In cases where we have much loss of connection between the tooth and the socket, with some lime deposit, it has been recommended to use a solution of aqua regia (nitro-hydrochloric acid) in the proportion of one part of the acid to seven of water; and in cases of still greater loss of attachment, with loss of considerable portions of the alveolar plates, the same authorities advise the use of a caustic paste, made by melting together caustic potash (potassa fusa) and crystallized carbolic acid, the object being to produce a scab or eschar, which will act as a protective covering for the protoplasm which is to effect repair. I have had no experience in the use of these powerful escharotics in the treatment of this disease, and, therefore, cannot speak from my own knowledge for or against their clinical value; but if it be true, as many assert, that the milder means are equally efficacious, I should hesitate to use such powerful remedies. If we desire a caustic effect, a moderately strong solution of chloride of zinc (20 or 30 grs. to ʒ i), in ordinary cases, is sufficiently escharotic to form a protective coating for the new material, to destroy the infusoria, and to modify the inflammatory process. In obstinate cases we may use a solution of sixty grains to the ounce, or even stronger. The zinc chloride is rendered still more acceptable in these cases, from the fact that it produces a slough which is in itself inodorous. Since the chloride of zinc seems to meet these requirements so well, where is the necessity for using a remedy more penetrating, more diffusive, and withal so difficult to manipulate as is the caustic paste above referred to?

If the teeth are much loosened, trim them down so that they will

not strike the opposing ones when the jaws are at rest, and support them with ligatures or artificial appliances, so as to protect the parts from violent motion. Endeavor to make them as immovable as possible. In bad cases, I believe this precaution is very necessary. Slight stimulation, by friction of the gums or by medicaments, may frequently be necessary to establish a healthy circulation, but constant or violent motion of the loosened teeth must necessarily be detrimental to the reparative process. Cleanliness is very essential, hence the patient should be carefully instructed as to the manner in which he should brush and care for his teeth. Astringent washes are frequently of value. The use of chewing gum is advocated by some, as tending to induce cleanliness of the teeth and a healthy condition of their surroundings. After removing the deposit, in most cases all that is necessary is to syringe the parts carefully with a mild antiseptic solution, and then follow up the case to see that the pockets are kept in as clean and aseptic a condition as possible. I sometimes instruct my patients how to syringe the pockets, and let them wash out the parts two or three times a day with a solution of carbolic acid (1 to 100), using care not to disturb the granulations. In cases in which the pockets are quite deep and much difficulty is experienced in cleaning the roots and keeping them clean, it has been recommended to slit up the pockets to their extremities, and then treat as an open wound. A system of sponge grafting has been tried in cases where there has been much loss of the surroundings of the teeth, and good results are claimed for this method of treatment.

When the deposit on the root is very adherent and extends almost or quite to the apex, it has been recommended to extract the tooth if it be an anterior one, cleanse the outside and the canal thoroughly, trim the end of the root slightly, fill the canal, and replant. Some operators claim great success for this mode of treatment, and say that with this method they have obtained complete reproduction of tissue, even when there had been removal of the socket almost to the apex of the root. I do not think this method is likely to become very popular, for the following reasons:

It is only applicable to the anterior teeth, and such teeth can usually be pretty thoroughly scraped and cleaned while in the mouth, unless the disease is well advanced and the pockets or sinuses are tortuous.

If resorted to in advanced cases where the teeth are quite loose, the death of the pulp and of portions of the cementum militates against the success of the operation.

I have performed replantation for the cure of pyorrhœa in only one instance, and in that case the disease was so far advanced, the tooth was so loose and so much covered with the deposit, that the pulp and the greater portion of the cementum were devitalized. The tooth, a left upper central, was so loose and tender that the patient could not stand the operation of cleansing it in the mouth. Knowing I could do nothing with it as it was, I proposed this operation to the patient, telling him frankly that the chances of success were very small, but that there was a faint hope of improving the condition of affairs. I soon gained his consent to try the operation. The tooth was extracted, its outer surface cleaned carefully, the pulp canal cleaned and filled, the end of the root trimmed slightly, both tooth and socket treated antiseptically, when it was replaced and held in position with ligatures. The pockets were syringed and treated with antiseptics about every other day during a period of two weeks. After the first day or two there was no pain, except on pressure, and no appreciable discharge. At the end of two weeks the ligatures were removed, and it was found that the portion of cementum which was still alive had united with the tissues, but so large a portion of the cementum was devitalized before the operation was performed that the union was not extensive enough to keep the tooth firm. It was left for a week without any support, when it was found that it dropped gradually until it came in contact with its antagonist. I reapplied the ligatures a few days ago, and still have them on. When I last saw the patient, I could not detect the slightest discharge, and the parts looked quite healthy, except for an increased redness of the gum. The tooth is somewhat firmer than before the operation, but it is still so loose that it will never be of much service in mastication.*

There are cases in which the operation of replantation would seem to be justifiable and likely to succeed. For example, we sometimes meet with instances in which the pockets will extend in a spiral direction toward the apex, beginning, perhaps, on the an-

* This operation was not a success. After about two weeks the ligatures came off again, and had been off but a few days, when the patient, in pressing and pulling on the tooth (presumably to test its firmness), forced it out of the socket. It may have been that it was kept in place more by atmospheric pressure and the elasticity of the soft tissues than by any actual union.

terior or labial surface and extending around to the palatal, with no external opening for the sinus on the palatal surface of the tooth. Obviously, such a tooth could not be cleaned without resorting to extensive cutting of soft and hard tissue to get at the pockets, and in such a case, if ordinary means failed, I think I would resort to this operation.

If we use any of the acid preparations for an astringent or caustic effect, we must be careful to protect the crowns of the teeth, and to wash them off with an alkaline solution (such as bicarbonate of soda), after using the remedy.

The general or constitutional treatment consists in the use of proper diet, out-door exercise and general supportive treatment. In cases where the secretions of the mouth have become much vitiated, or where the existence of a purulent discharge has so much interfered with the functions of digestion and nutrition as to produce anorexia or general debility, tonics may be required. In such cases we may prescribe preparations of iron, quinine, or any of the bitter tonics, and advise the use of cod-liver oil. Of the iron preparations, I would prefer the dialysed or the reduced iron, because these forms are non-irritating, non-constipating, and do not directly affect the teeth. The dialysed iron may be given in doses of ten or fifteen drops, and the reduced iron in doses of two grains after meals. Sulphate of cinchonidia has been advised as a tonic in these cases, because it is believed that this substance is readily converted into the cruorin or hæmoglobin of the blood. In cases where the disease is associated with gout, rheumatism or diabetes, endeavor to combat the general disorder.

PROPHYLAXIS.—Since salivary calculus is supposed to be the most common exciting cause of this disease, in order to avoid this deposit and prevent the occurrence or recurrence of pyorrhœa alveolaris, we should advise cleanliness, proper brushing, care and exercise of the teeth. We should see that partial artificial dentures do not bear too heavily on the teeth or irritate the gum-margins. Regulate the diet, and insist upon the patient's indulging in healthful exercise. Instruct the patient to exercise the teeth properly in mastication.

The prognosis of the acute or traumatic form is good. The retention of the teeth is accomplished, their vitality preserved and the disease cured on removal of the cause. The prognosis of the idiopathic or chronic form is not so good. In regard to this form of

the disease, Prof. Abbott says “pyorrhœa alveolaris is never cured; i. e., the normal condition of the parts restored.” He also states that it can be relieved for the time being, and may appear to be cured, but the condition that first developed the disease remains in the system in spite of treatment, and that the same results will recur, unless the case is followed up and treatment repeated every few months—certainly as often as once or twice a year. When due to the presence of salivary calculus, the disease can be cured, or rather the parts can be restored to a healthy condition, provided the sanguinary deposit on the roots can be entirely removed. In cases in which the disease has made little progress and there has been but slight ulceration of the pericementum, I believe the parts may be restored to a normal condition, with the exception, perhaps, of a slight recession of the gums, due to cicatrization of the new tissue. It is claimed by some writers that the protoplasm is capable of being transformed into the tissues normal to the parts, even to the reproduction of new bony sockets for the teeth. I have seen cases of simple salivary calculus in which this new formation of osseous tissue has apparently occurred, and where teeth, deprived of a greater portion of their sockets and very loose, have become as firm and their surroundings to all appearances as perfect as before. Whether or not there was complete restoration in these cases, even to the formation of new bone and new pericementum, I cannot say positively, but it certainly seemed as if such was the case. It is quite possible that we may have a restoration of bone in pyorrhœa alveolaris also, for the bone is very seldom deprived of its periosteal covering in this disease; but the pericementum (toward the neck of the tooth) is to a certain extent destroyed by the ulcerative process, and whether it can be reproduced and again attach itself to the scraped surface of the cementum, is still a matter of doubt. I think it more likely for the reproduction of the bony socket to occur in cases of salivary calculus proper, where the absorption of bone is due to the pressure of a foreign body, than in cases of pyorrhœa alveolaris, where the process (so far as the absorption of bone is concerned) is more of a physiological one, in which the bone atrophies and is absorbed because it has no further function to perform. Without doubt, we sometimes see a formation of new tissue in cases of pyorrhœa alveolaris. The gum may return almost to its normal position and the teeth become firm, but may it not be that this firmness is

due to a return of the irritated, inflamed and thickened pericementum to a normal condition, and to the formation of fibrous or scar tissue to take the place of the lost pericementum and alveolus? I believe that in the majority of cases this is the condition which prevails, and that we do not have a complete restoration of the parts to their normal condition, particularly in those cases which are far advanced. Probably the reason we do not have this reproduction is because of the difficulty in keeping the teeth in a proper state of fixation. We must not despair of a good result because we do not happen to see marked improvement in a short time. A good rule is to keep up the treatment until suppuration ceases, and the production of new tissue begins, or until there is no hope of such a favorable result. It may require weeks and even months of careful treatment in order to restore the parts to a good, healthy condition.

CARIES AND NECROSIS OF THE JAWS.

BY J. H. MARTINDALE, M. D., D. D. S., MINNEAPOLIS, MINN.

READ BEFORE THE MINNESOTA STATE DENTAL SOCIETY.

The death and ultimate separation of portions of the margins of the maxillæ are not of uncommon occurrence. The thin edge of alveolus may exfoliate after an extraction, no matter how skillfully the operation may have been performed, and its results may be confined alone to a slight prolongation of the period of healing. But in the stead of this very limited death of bone, the disease may be much more extensive and involve very large portions, or the whole, of either jaw.

The causes that bring about necrosis and caries of the jaws are various, and cannot always be traced. Among them are the exanthematous diseases of children (measles, scarlet fever, chicken pox, scarlatina, etc.). In these cases the sequestrum is generally limited to the sockets of one or two temporary teeth, very often carrying away with it the follicles of the permanent ones, this being, probably, a by no means infrequent cause of the failure of these teeth to appear, a condition of things frequently presenting in our dental practice.

Constitutional syphilis is a predisposing condition to necrosis, and such an instance as that cited by Sir Christopher Heath, in his

work on Diseases of the Jaws, where a dentist had suit brought against him for a case of necrosis ensuing in a jaw after the extraction of a tooth, the patient being a syphilitic, is not uncommon.

Blows, kicks, bruises, and the like, are frequent causes of caries and necrosis, especially in individuals of scrofulous or anæmic habit. A great many, undoubtedly the larger number, of diseased conditions of the maxillæ, originate in diseases of the teeth, and in unfortunate, or even careless dental operations. Among the former causes may be enumerated devitalized pulps, encysted teeth (or odontocelles), and delayed eruption of the *dens sapientiæ*, and among the latter, heavy malleting, roots improperly filled, and roots filled with improper material (as cotton). I have also even seen in my own practice, I am sorry to say, necrosis with the exfoliation of alveolar process, as a result of application of arsenious acid to a pulp for the purpose of devitalization. I am persuaded that this, not infrequently, occurs in cases where the devitalizing agent was used with every protective care, as in my own, where the amount of arsenious acid was very slight, and only applied to the pulp after the tooth containing the pulp had been thoroughly covered by the rubber dam, and over it an oxy-chloride of zinc filling.

Another mineral poison, with specific tendencies to effect necrosis of the jaws, is phosphorus, the fumes of which, inhaled by workmen in match factories, induce the most extensive necrosis. But we shall not deal with phosphor-necrosis in this paper, as it is of very infrequent occurrence in this part of the country.

To the relief of the dental surgeon be it stated, that in addition to those cases of diseased maxillæ, the unquestioned result of cachexia, exanthema, mineral poisons and traumatisms, many cases occur which are, without doubt, idiopathic. Heath says (Vol. 2, page 459): "I have seen the disease (necrosis of the jaws) occur in otherwise healthy persons without any assignable cause. In this way I have seen the whole of the alveolar process of the upper jaw exfoliate in a young lady, otherwise perfectly healthy, and I have several times had occasion to remove large portions of the lower jaw, in one case more than half of the bone, for necrosis that could not be referred to any assignable cause." And again, Tomes in his *System of Dental Surgery* (page 496), after describing a case of necrosis of the incisive region of the upper jaw, where a large portion of the alveolus in that region was involved, and sufficient of

the maxillary bone proper to have caused a large opening into the nares, concludes by saying: "The most remarkable feature in the case was the entire absence of any assignable cause of mischief. The patient was a healthy man of middle age, with no history of syphilis; the tooth had been only slightly decayed, and had been successfully filled with gold, years previously. No blow had been received; in fact, nothing whatever could be discovered to account for the lesion."

Stanley, also, in his work on "Diseases of the Bones" (page 71), speaks as follows: "A large portion of the lower jaw in young persons occasionally perishes without any previous derangement of the health, local injury, or other apparent cause. But in some cases, an aching of the bone has preceded the death of it. Such cases of necrosis usually occur in early life, between the fourth and twentieth years, but rarely later."

Authorities in evidence of the frequency of these cases of idiopathic origin of maxillary necrosis might be quoted in large number. I lay stress upon this fact, in consequence of the too frequent reproach cast upon careful and discreet dental practitioners, on the score of their ill-advised or rough operations having induced the disease. I believe that, in certain cases, the tissues adjacent to the field of a dental operation are in a condition peculiarly prone to take upon themselves an inflammation, which, becoming a pronounced ostitis, then breaks down into a veritable necrosis or caries; this, too, without any cachexia, which should naturally be supposed to predispose to this result. None the less, it should be constantly borne in mind that, by improper filling of the pulp canals, excessive and violent wedging, heavy malleting and the like, many cases of caries and necrosis are induced.

DIAGNOSIS: In the outset, the indications that attend necrosis are not to be distinguished from alveolar periostosis; but soon, instead of confining itself to local or circumscribed swelling, the gums become congested and swollen over a considerable area, and pus oozes from the margins of the gums, the teeth become loose, and in a few weeks the alveolus becomes loose and lies in its position bathed in pus. Pain is common to the early part of the disease, and is usually supposed to be toothache; the patient's health frequently suffers greatly, all the symptoms of septic fever, high temperature, rigors, sweats, etc., being frequently present, and more than in necrosis

generally is maxillary necrosis fraught with special danger to the health, in consequence of the large amount of the pus and sanious products which are often voided into the oral cavity and swallowed. A very common condition encountered in our practice (I have hesitation in including it in the scope of either maxillary caries or necrosis, yet it is very generally regarded by practitioners as at least strongly allied to an ulcerative or necrotic disease of the maxillæ) is such as, for example's sake only, may be briefly outlined in the following as a type.

A patient goes through the history of the origin, symptoms and natural suppurative termination of what is generally known as an alveolar abscess, finally voiding its contents by a fistula through the gums adjacent to the point of origin of the disease; one or more teeth in the meantime are found to have become quite loose; a probe passed into the fistula soon plunges into a large cavern or cyst excavated out of the substance of the alveolus, and sometimes of the maxillary bone proper. This excavation will be found to have protruding into it the root or roots of one or several teeth, and the educated and discerning touch of one accustomed to discriminating with the probe alone, will readily detect the presence of diseased and spongy bone forming the walls of the cavity, and often, also, the roots of the teeth protruding into the cavity will be found to be themselves partially or wholly absorbed by the diseased condition.

Such a case as I have outlined above is a condition of very common occurrence in dental practice. Having voided their contents through a fistula, they often succumb to the simplest but radical means applied by tapping and cleaning root canals, etc.; or they persist for months, even years, in a purulent discharge through the alveolus, which is either persistent, or intermittent for quite a space of time. I shall have cases in my own practice to cite in this paper, in evidence of the treatment of this very common disease of the alveolus. Although unaccompanied by the systemic disturbances common to an equally large area of lost bone in other parts of the body, and although unaccompanied, as a rule, by distinct and considerable sequestra, I think the scope of this paper should include them.

TREATMENT: All loose roots that cannot be made useful by the attachment to them of artificial crowns should be extracted. If,

upon careful examination with a probe, we find that the bone is not diseased very extensively, that is, if caries has not extended immediately surrounding the roots of one or two teeth, absorption and extrusion of dead bone may usually be effected by the use of sulphuric acid brought directly in contact with the area of diseased bone. The preparation of the acid that I prefer is that known as the "Aromatic Sulphuric Acid" (a thirteen and a half per cent. solution of the sulphuric acid of commerce, together with the aromatic principles of various spices). My method of using it is to inject it through the fistulous opening and directly in contact with the diseased bone by means of a hypodermic syringe, provided with a blunt-ended needle, keeping it there for several minutes. I commence with a strength of about 70 per cent. solution of the aromatic sulphuric acid, and soon increase it to full strength. This treatment, conjoined with the use of injections of the peroxide of hydrogen, the patient's health at the same time being toned up with tonics, and the bowels kept freely open by the use of saline waters and aperients, will often effectually remedy the trouble. But in some instances the diseased bone is not gradually consumed and cast off, but either large sequestra are exfoliated, needing surgical assistance in their removal, or a considerable area of honey-combed carious bone is formed, needing removal in like manner by other means than by the dissolving properties of the acid. My treatment of such conditions will be set forth more in detail in the recital of a few cases from my own practice. It should be remembered that the termination of a periostitis in a carious or necrotic condition may often be averted by freely and deeply scarifying the gums, use of saline cathartics, rest, attention to diet, tonics, etc., if commenced early enough.

CASES.

CASE I. In February of 1882, a young boy of nineteen years of age was brought to me by his father for a condition of fixation of the jaw, accompanied by a large swelling of the right cheek, and enlargement of the lymphatics in the cervical and sub-maxillary region. The circumstance of extensive cicatrices upon the face, resulting in consequent contraction of the facial muscles and distorted features, immediately induced me to ask of his father the cause, and I was informed that the boy was affected seriously with

scrofula, and that these were the result of several running sores of the face.

As the abscess (for such it was) upon his face was already pointed, and I could not get into his mouth to void its contents there, I lanced externally, and very foetid, greenish-yellow pus was copiously poured forth. Upon closely examining this pus, I found therein contained small spiculæ of bone, and upon exploring the abscess tract with a silver probe I was easily able to discern the presence of an opening in the inferior maxillary bone, just before its junction with the ascending ramus. There seemed to be no large sequestra of bone detected by the probe, but rather a honeycombed or porous feel to the walls of the cavity. The abscess cavity was then very thoroughly irrigated with carbolized water, and the boy was sent home with instructions to take a tonic of iron and quinia, good nutritious food, and return in two days. It should be remarked that the patient had been having high evening temperatures for several days, and his general condition was much run down by pus absorption.

Upon his appearance at my office in two days, I found my patient with the abscess still discharging (I had placed a seton in the opening), but the enlarged condition of his face very much decreased. I was now able, by the aid of a wedge and anæsthesia, to get his mouth open, and the evidence of the origin of his trouble (combined with the scrofulous cachexia) was soon evident; a late, and difficult erupting, *dens sapientiæ*. Said tooth was lodged, with its masticating surface presented in apposition to the posterior approximal surface of the second molar in front of it, and only one cusp emerging above the gums, which were very turgid and inflamed. With a physic forceps I managed to extract the offending tooth, and was then able to run my probe into the socket, and from there to the diseased tract in the maxillary bone, and so on out through the opening in the face which I had previously made.

I now had what I wanted, "through" drainage, and it was easy for me to inject my carbolized or other fluids (I had not then peroxide of hydrogen at my command) through the whole diseased tract. My treatment now was a thorough scraping of the walls of the tract with a dull scraping instrument, thorough and frequent irrigation with antiseptic washes, and a tonic treatment of the system with good food, iron, wine and quinia. After five or

six days, the pus ceased to run, and in three or four days more the external wound was allowed to heal, the boy's health was renewed, and the case dismissed.

CASE II. I was called by a dentist, Dr. X., to see a case that had developed an undoubted carious or necrotic character. The patient was a lady, aged about thirty-five years, married, and reported herself as possessing usually good health. Upon examination of her mouth, it was seen that pus was escaping copiously from the gums surrounding the superior left central, lateral, canine and first bicuspid. As to its cause no sufficient origin could be assigned; it had supervened not very long after the insertion of a not very large approximal filling in the lateral, but the circumstance of there being no conditions apparent at the time of the operation to contraindicate any operation, together with the fact of its smallness and simplicity, seemed to preclude the probability of the filling being the direct cause; the case seemed to point rather to being one of those previously alluded to in this paper, whose origin can be assigned to no direct source. For five or six weeks she had been subjected to the customary and proper treatment with the hypodermic injection of aromatic sulphuric acid, the disease seeming not to abate, but rather to grow worse and worse. The patient's health also had begun to suffer materially, her temperature running to 104, and she was generally weak and run down. Acid treatment having failed, it was a question as to what should next be done. Upon examining the parts with a probe, it was easy to determine the presence of much diseased bone, and several detached pieces of the central, lateral and canine were so loose that it seemed as though it would be easy to remove them with the fingers, while the first bicuspid had begun to be seriously affected. After careful examination it was deemed best to operate for removal of the dead bone, which was done as follows: The patient anæsthetized, holes were drilled into the pulp cavities from the lingual aspects of the central, lateral and canine teeth, all of which were found to contain dead pulps. Then a splint which we had made of vulcanite was placed in the mouth, and to it the central, lateral and canine were securely ligated. This was to prevent the dropping out of these teeth during the operation, which would otherwise undoubtedly have occurred. I then made a linear incision about an inch and a half in length, parallel with the margin of the gum, and

about a third of an inch above the margin; in then passing down into the gum the alveolus was found to be entirely dead, some of it absorbed and carried off with the pus, and a number of the dead pieces were lying detached in the wound. These were removed with gouges, chisels and spicula forceps, the rest of the dead bone involving, we found as we went on, a considerable portion of the anterior external face of the maxillary bone. When the bone had all been removed, it was found that we had a space presenting an aperture about an inch long and three-fourths of an inch high, and perhaps nearly an inch deep. It extended posteriorly to the antrum, and in front to the median line; the palatal surface or floor of our cavity was all devoid of bone, and naught remained there for quite a space save a mucus membrane partition separating us from the mouth. In one place the cavity opened into the nasal cavity, about an inch back from the nostrils. The roots of the lateral and canine teeth projected, entirely bare of any bony investment, into this cavity, as also did the apices and sides of the bicuspid and central, which were approximal to the diseased tract. During our operation the canine came out entirely, and although we began to think that it was a very forlorn chance to save any or all of the teeth, we tied it back in its place to see if perchance new tissue would close around it.

Every step in the operation, it should be noticed, was done under constant injection of bichloride of mercury water, and all the probes and instruments were thoroughly immersed in this antiseptic wash before and during use. We now plugged up the opening with three pieces of cheese cloth charged with iodoform, each one-half inch wide and four inches long (they came just level with the top of the wound), and then left the patient until the next day. Considerable swelling of the face was then found, but otherwise everything seemed favorable. Upon removing the dressing we found, to our satisfaction, not a trace of pus, but rather healthy lymph, and every evidence of a healthy wound. Carbolyzed water was injected freely, and it was found that considerable of the injection passed into the nose through the opening that extended into it. To summarize in brief the issue of the case, I will say, that from the day of the operation, we saw no pus; when about every five days we removed the dressing, we found the reparative process going on splendidly from the bottom; soon the opening into the nares closed,

tissue formed around the bicuspid and central teeth, and at the end of about six weeks from the time of the operation, osseous tissue had been formed everywhere, save on top of the roots of the incisor and lateral. At the present writing, it seems as though the canine would be lost; the other teeth will, however, be profitably saved, and even though none of the teeth involved had been saved, the interest attaching to the loss and repair of so large a portion of the alveolus and maxilla has been deemed sufficient excuse for so detailed an account. The patient's general health, which is now perfect, began to amend from the time of three or four days after the operation.

The next and last case with which I shall burden you is one of very frequent occurrence in our practices; not usually very dangerous to the general health, it is true, but often attended with very considerable loss of alveolar substance and loosening of the teeth. The disease is sometimes very obstinate in yielding to local medication, or to the use of aromatic sulphuric acid, but by simple surgical removal of the diseased bone it will almost always cease. To illustrate, I will select at random from a number of similar cases in my practice.

CASE III. Miss M—— applied to me to relieve her of a discharge issuing from a fistulous opening in the gums, between the left lateral and canine superior teeth. She reported the discharge to have existed almost continuously for over a year. Upon examination of the lateral, which was filled upon its mesial approximal surface with gold, I easily discovered it to contain a dead pulp. I immediately drilled a hole through the lingual aspect of the tooth, and, upon entering the pulp cavity, found it to be filled with a fluffy substance which, upon removal, was found to be a mass of cotton wool, which the patient said had been placed there about two years ago by a dentist who had filled the tooth. I then, after as thoroughly cleansing the pulp canal as possible, filled the said canal with a dressing of cotton floss and iodoform, and dismissed my patient for a week. When next she came I removed the iodoform dressing, thoroughly washed out the canal, and entirely filled it with oxy-chloride of zinc. I then took a probe, and passing it down through the fistulous opening was able easily to discern the presence of soft, dead bone, which I proceeded to remove with a bur in the dental engine; first, however, to reduce pain and diminish hemorrhage, I injected as deep as I could penetrate with a blunt

hypodermic needle into the fistula, about 8 m. of a four per cent. aqueous solution of hydrochlorate of cocaine. I then proceeded in two or three minutes to remove with my bur the dead bone, which I could easily tell by its feel, and entered a cyst, or enclosure, about the size of a small marble, to which the fistula led. The sides of this I thoroughly scraped until I was sure the walls were composed entirely of live bone, and also burred off the top of the lateral tooth which was projecting into the wound. I then very thoroughly washed out the cavity with carbolized water, and after inserting in the orifice of the wound a tent of cotton I dismissed the patient, who said she had suffered during the operation no pain. The next day I found no pus, and injected freely with peroxide of hydrogen, and giving her a syringe and some peroxide directed her to use it herself three times a day. She did so; in three or four days the pus ceased to flow, granulations of new tissue began to appear, and in about four weeks the orifice healed up, and during ten months past has shown no disposition to recur.

PERSONAL RECOLLECTIONS OF A DENTIST OF THE EARLY DAYS.

BY DR. L. W. BRISTOL, LOCKPORT, N. Y.

READ BEFORE A UNION MEETING OF THE 5TH, 6TH, 7TH AND 8TH DISTRICT
DENTAL SOCIETIES OF THE STATE OF NEW YORK, HELD IN
ROCHESTER, OCTOBER 26TH AND 27TH, 1886.

At a Union Meeting of the 7th and 8th District Dental Societies, held in Buffalo, in October last, a paper was read, having for its title "Warranted."

That word has been the cause of a great deal of trouble and misunderstanding in the profession. Twenty years ago, at the bottom of every dentist's card it might be found, and in a great majority of cases the word "permanent" was added. One now scarcely can imagine how any dentist with half a grain of common sense could fail to see the absurdity of such an announcement. Yet it was the common practice in those days. We then met—as we do now—a great many unresonable people. I will give you some instances of how "warranted permanent" has served me in my practice:

I had made a partial denture on gold plate for a Mrs. S. The plate was well made and a good fit; so much so that three weeks after she said, "I like my teeth very much. If you always give as good work, I think your patients can find no fault." About two

weeks after, two young ladies called on me and asked if Mrs. S. had been to see me. They were school-girls, and their school-room adjoined the room of Mrs. S. They said she had a tea cup and brush and was cleaning her teeth. She left them in a chair and went to put away the cup and brush, when one of the girls entered, took hold of the chair, and not seeing the teeth tipped them on the floor, and another girl stepped upon them and bent them. Mrs. S. was very angry, and loudly lamented her loss. The next day the old lady came to my office. She said, "Just look at my teeth; they don't fit at all, and they never did." I replied, "Why, Mrs. S., you told me last week they were a perfect fit and were satisfactory; they look as though they had been stepped upon." She replied, "No, I never told you they were a good fit; they have not been stepped upon, and you lie if you say so." She was a very zealous church member, but I handed her back the teeth, opened the door, told her to get some other dentist to do her work, for I utterly refused to do anything more for her. She replied, "You warranted them permanent, and I will sue you." I pointed to the door and told her to sue when she pleased.

I heard nothing from her for over one year and a half, when one morning a message came to me that Mrs. S. wanted to see me immediately. I had heard that she was very ill with an incurable disease. I called on her, and found her on her dying bed. She held out her hand and said she wanted to ask my forgiveness for having accused me of lying, when she was the one who lied. She had asked God to forgive her, and he had done so, and now she wanted my forgiveness. I told her that if God had forgiven her I could not do less, and gave her my hand, and left. In about two weeks she died.

I will relate another rather extraordinary case in my practice. I had made a case of teeth on gold plate for a Mr. H. They were well made and a good fit, and he was well pleased, and paid for them. About one week after, he came up behind a large, strong, athletic man and seized him around the body. The man turned suddenly and his elbow struck H. a powerful blow full in the mouth, knocking out his false teeth and loosening the teeth to which they were attached. He came to me and said, "You are not going to charge me for repairing them, are you?" I replied, "Yes; I did not warrant them against such accidents." He insisted that I should make them good, free of charge.

A day or two after I met his attorney, who said, "I am going to bring suit against you for not repairing the teeth of Mr. H." We argued the case, but he insisted that I had warranted them permanent; that it was a good accidental policy, and he would make me fix them without charge. The prospect looked fair for a law-suit and a jury trial. The lawyer was an eloquent man, a good, smooth talker. I thought I was beaten already, and I made them over. H. wore them about three weeks, when one day while leading his horse, which had a habit of throwing his head around, he was struck in the mouth, and his teeth again knocked out, breaking some of them. Here was another "warranted permanent" complication. I compromised and made them over, and got them satisfactory. In a little over four months there was a great squirrel hunt, and H. was one of the party. They had a big day of it, got back to a country tavern and imbibed rather freely, when one of the party, who was pretty full of fire water, in fun thrust the butt of his gun at H. Being a little too much intoxicated to judge of the distance, he hit him a full blow in the mouth, split open his lip, made havoc with his teeth, and "warranted permanent" came home to roost again. I made them over, adding two more teeth: in fact, made a new job of it, made out his bill, and, adding the words, "*Not warranted for ten minutes.*" told him to show his lawyer the bill and receipt, and that if another accident happened to his teeth I would nail a horse-shoe over his mouth for luck. Shortly after he removed to Kansas; I never heard of him again. That attorney is not practicing in Lockport now. He has passed away, and has probably been called upon to plead in a higher court. If he escaped a verdict of guilty, I can only say that he must have pleaded earnestly.

It is now about fifteen years since I refused to administer an anæsthetic to any person unless there was a third person present, and my reason for it was this: There came to my office a lady with her daughter about seventeen or eighteen years of age. She wanted the right lower molar extracted and desired chloroform. She was seated in my chair; I prepared the napkin, poured on the chloroform and handed the bottle to her mother, telling her to place her thumb over the mouth, and if I held out the napkin to pour on a little. It was not necessary to apply more. The young lady took it kindly, and was soon under its influence. I extracted the tooth,

and after a short time she came out from its influence. I asked her how she felt. She snapped out, "Don't speak to me." Her mother said, "Why do you answer the doctor so roughly?" She replied, "I did not come here to be insulted." Her mother asked her who had insulted her. She said I had; that I had hugged her and kissed her, and taken improper liberties with her. Her mother assured her that she stood right beside her every instant, and nothing of the kind had occurred. She insisted that her charge was true. I advised the mother to take her to the next room and let her lie on the lounge, and she did so. On the wall over the lounge hung a map of the village of Lockport, and on the right lower corner were the words, "Drawn by E. C. Callen, civil engineer." She caught sight of that and began to scream and cry. "There, it is drawn by Callen. I did not want it drawn by him; I wanted Bristol to draw it, and now I have been insulted and ruined." Her mother quieted her after a short time, and asked me if patients often got such whims in their heads. I told her they had all kinds of hallucinations, but in my practice I had never met with so marked a case. "Suppose," said I, "that the young lady had come here alone and gone home and told this story; what would you have thought?" She replied, "I should certainly have believed her."

I remember the case of poor Dr. Beal, of Philadelphia, who was tried, convicted and sentenced to State prison on a case precisely like this, save that I had a witness—her mother—in my favor; otherwise I might have been obliged to wear the striped clothes and look through the prison bars at Auburn. I wish to impress most emphatically upon the younger members of the profession the importance of having a third person present when giving an anæsthetic, especially to a female patient. That mother has long since gone to her grave. The daughter married, and has three children. A short time since a friend of mine, in the course of conversation, alluded to the incident, when she replied: "If it had not been for mother I always should have thought and would have taken my bible-oath that I was assaulted and ill-used at that time, and I have still the same impression."

It is now about five years since I utterly refused to administer anæsthetics and operate. I say to those applying, "Bring your doctor or call in one; there are plenty of them; let them administer it and I will operate." My reason is this :

A young lady accompanied by her brother came to have two teeth extracted, and wanted chloroform. I administered it, and extracted the teeth. She took it kindly, and came out from its influence all right, perfectly satisfied, paid her bill, and left for home. On the way the horse took fright at the cars, ran away, tipped them out in the gutter, and the lady was taken insensible to a farm house near by. They saw bloody saliva oozing from her mouth, and thought she was injured internally, but she finally recovered consciousness and told them the blood came from her mouth, for I had extracted two teeth for her. This relieved their anxiety, and they took her home. The next day one of the family to whose house she had been taken came in and told me of the accident, and said she was badly hurt. I heard nothing more for two months. In passing up the street one morning I met a lawyer, who said he wanted to see me in his office. I accompanied him, when he asked me if I remembered, two months before, giving chloroform to Miss —, and extracting two teeth? I told him I did. "Well," said he, "she and her neighbors say she has not seen a well day since. They want me to commence a suit for damages. Cannot you and I come to a settlement without a law-suit?"

I replied, "In this case we cannot. She was not injured by chloroform. Did they not tell you that in going home from my office the horse was frightened at the cars, ran away, tipped her out in the gutter, and that she was carried in an insensible condition to a farm house, and it was a long time before they could bring her out of that condition?" "No," said he, "that is all news to me, and if it is true, we cannot make out a case." In a few days the young lady and her friends visited his office, ready to make the affidavit in a suit against me. He asked them if they had a runaway on the road home from my office, and if the young lady was pitched into the gutter and carried to a neighboring house insensible. They admitted the fact, but wanted to know what that had to do with her taking chloroform and not seeing a well day after it. He told them that if he commenced a suit against me, I could show that the injury and shock to her nervous system was what caused her illness, and that I would beat them, and they have to pay the cost of suit. He declined, under the circumstances, to bring suit, and I never heard any more of the matter.

I have said, in some of my papers, that I have spent more time

working over a hot furnace trying to make continuous gum-work moulded over an impression of the mouth, than I ever shall again. Without being perfectly satisfied, or ever expecting to be, I said that John Allen had come the nearest to perfection, but his work has faults. Last August, at Niagara Falls, at the meeting of the American Dental Association, I saw some of the work done by Dr. C. H. Land, of Detroit, with his new gas-furnace, and I have seen the work in actual use, and I must now confess that in my opinion he has come nearer perfection than any one had done previously. He has overcome difficulties that with coke or coal were nearly insuperable.

The younger members of the profession cannot possibly conceive of the great disadvantages we labored under fifty years ago. Contrast those years with the present time. Look at the wonderful display of dental materials at Niagara Falls, at the convention in August; five rooms devoted to instruments, teeth and all kinds of materials required by the profession; seven different manufacturers from all parts of the United States and foreign countries. Will the coming fifty years witness as great improvements in dental surgery as the past fifty?

We live in a wonderful age of the world. In my time I have seen the Erie Canal built, the steamboat and steamships, the railroad, the telegraph, the electric light, the mowing machine, the reaper and binder, the sewing machine, and last, though not least, the stretching of a wire for hundreds of miles, which when talked to at one end the very voice is recognized at the other. I hope and pray that the coming fifty years will witness as great or even greater improvements in dentistry as in the past. I say to the young members, improve your opportunities; remember that time will plough deep furrows in your brows, whiten your hair, bring on the infirmities of age. May you then look back upon your years as well spent, the profession having been honored by your connection with it. May you then be able to exclaim, "I have filled my destiny, run my course, lived my allotted time, satisfied to step down and out, with friendship to all and ill-will to none." God bless dentistry and all who follow it conscientiously.

"So silent time, with unresisting power,
Labors at midnight in the lonely tower;
Corrodes the granite in the ivied hall,
And smiles to hear the crumbling atoms fall."

Reports of Society Meetings.

AMERICAN DENTAL ASSOCIATION.

TWENTY-SIXTH ANNUAL MEETING, HELD AT NIAGARA FALLS,
AUGUST 3D, 4TH, 5TH AND 6TH, 1886.

REPORTED FOR THE INDEPENDENT PRACTITIONER BY "MRS. M. W. J "

(Concluded from page 626.)

THURSDAY EVENING SESSION.

After the reading of the minutes and the discussion of some proposed Amendments to Section 1 of Article VI of the Constitution, the work of Section VII was continued.

Dr. H. A. Smith read a paper on

THE TONGUE IN HEALTH AND DISEASE.

The tongue being so conspicuously in view during dental operations, its varying appearances, if understood by him, might be made of much benefit to the patient.

Vegetable parasites form the first great source of diseases of the mouth and tongue, furred tongue being regarded by modern science as a growth of fungus, from spores deposited in the papillæ of the tongue. Traumatic ulcers, from the irritation caused by broken teeth, frequently come under the notice of the dentist.

Amalgam fillings are sometimes supposed to cause aphthous patches, but this is probably due to roughness of the fillings or margins, which act as a mechanical irritant. Ragged teeth, rough fillings and ill-fitting plates are enumerated among the causes of cancer of the tongue. The anterior half of the border of the tongue being most frequently affected with the carcinomata, points clearly to the teeth as the offending organs. The slightest lesions of the tongue should be noted; a very slight operation on the part of the dentist may sometimes prevent a simple ulcer from developing into a cancer of the tongue, with its usually fatal termination.

Dr. A. H. Thompson, Topeka, Kansas, read a paper, entitled

PATHOLOGICAL HEREDITY AND GOUTY TEETH.

Defects and deformities of the teeth are due to a transmitted

predisposition to certain diseases, but we are in the dark as to how this is effected. The pabulum may be perverted by disease, or the formative organ itself may be affected. The action of acid fluids at the time of eruption may affect the enamel, but does not account for defects in the body of the tooth, the former being far less fatal to these organs than the structural injuries due to hereditary influences. The effects of the latter are so invariable as to have a positive diagnostic value to the pathologist. It is very desirable that observations in this direction be made and recorded, particularly by specialists who have access to hospitals and other institutions where large numbers of persons are collected. Gout is not endemic in this country, so that the study of gouty teeth is of less practical importance to American dentists, yet they have a positive diagnostic value in determining the presence of hereditary gout, gouty teeth being recognizable as soon as seen. Their characteristics have been carefully studied by Drs. Duckworth, Carpenter, Stewart, Donkin and others. Milner Fothergill says there is little doubt of their distinctive diagnostic value.

The subjects of Section VII were declared open to discussion.

Dr. Ingersoll—Doubted if disease was ever transmitted; only the diathesis or tendency to certain pathological conditions is inherited. A man may have a wart develop at the age of forty years, and his son may have one exactly similar at the same age, but there having been no wart previous to the age of forty it does not come by inheritance, although the tendency existed. The same is true of consumption and other forms of disease said to be hereditary.

Dr. Morgan—Thought this distinction a mere play upon words. It is more than a mere tendency which is transmitted. He cited the persistency of the "Morgan" type in horses, their temperament, powers of endurance, gait, etc., running through many years, and the inheritance yet continuing in all horses of that breed. He did not think the diseases of the oral cavity and tongue, referred to by Dr. Smith, fell properly within the province of the dentist. He had never seen but one case where aphthous patches appeared to correspond with amalgam fillings.

Dr. Brophy—Thought that incipient cancer was more frequent than we suspected. Many ulcers falling under the observation of the dentist would, if allowed to run on, develop into carcinoma, ending in death, this form of cancer developing very rapidly, and

often there would be no such development but for the irritation of a tooth, there being no inherited tendency.

Dr. Ottofy—Thought that the condition of the mouth and oral fluids was an important subject for the consideration of the dentist, and hoped that the suggestions of Dr. How would be adopted.

Dr. Harlan—Said that the part played by germs in producing acid ferments was now generally recognized. If the germs are destroyed, we no longer have their products, thus correcting one source of acid saliva.

Timely attention by the dentist in removing the cause of incipient lesions may often save the tongue, or a portion of it, or even life itself.

Dr. Jas. Truman—Had found that the mixed secretions of the oral cavity were habitually neutral, being acid only at the necks of the teeth and other places at rest. During the night there is but little secretion of alkaline saliva, and at that time the acid secretions predominate. Tests, to be of value, should be made at different hours, both of the day and night.

Dr. Atkinson—Congratulated the Association on this discussion of scientific topics, though he regretted the lack of knowledge of the processes of nutrition and of the elements of tissue. Microbes are the antecedents of unhealth. Living bodies die through retrogressive molecular changes, but we don't know the causes; we know only antecedents and effects. Food is churned into pabulum, which is the nutrition of all the tissues carried into needy territories and used for building up the body. Listening, in the mind, is the equivalent of the tissues waiting for pabulum.

Dr. Thompson—Said that he did not see the value of the distinction drawn by Dr. Ingersoll between inherited disease and transmitted diathesis. Whether it is the disease or the diathesis that is transmitted, the result is the same when children are born syphilitic. He only wished to bring to notice a certain form of idiosyncrasy.

On motion, the subject was passed. Dr. Crouse offered a report from the Executive Committee, embodying a history of the difficulties encountered in the choice of place of meeting, and recommending several changes in the Constitution, extending the power and authority of the Executive Committee and its Chairman, and asked unanimous consent for the immediate consideration and

adoption of the amendments. After a heated discussion, all the personal portions of the report were ordered stricken out, and the report thus amended was accepted.

The proposed Amendments to the Constitution were laid upon the table for one year.

Adjourned to 9 A. M.

FRIDAY MORNING SESSION.

The Association was called to order at the usual hour, the President in the chair. The minutes of the previous session were read and approved.

Drs. L. P. Haskell, W. B. Ames and W. H. Trueman were appointed by the President as a committee to confer with the manufacturers of mineral teeth.

Dr. C. N. Pierce introduced a resolution discountenancing, by the Association, the customary banquets and entertainments, which was unanimously adopted.

A resolution offered by Dr. S. W. Dennis, requesting the different professional and scientific associations of the country to select places and times of the annual meetings of such bodies as nearly uniform as possible, to accommodate members from distant portions of the country, was lost.

A resolution offered by Dr. Marshall, that the Association recommend to the various Dental Colleges that their sessions be uniformly extended to not less than nine months in the year, was referred to the Committee on Education.

By unanimous consent, Section VI of the Constitution was amended as follows: Sections II and III—Dental Education and Dental Literature and Nomenclature—were consolidated as Section II, and a new section, to be known as Section III, Pathology and Surgery, formed.

Asheville, N. C., received a large majority of the votes cast for the next place of meeting.

The list of officers elected has already been published. (See page 529, September issue.) The officers-elect were installed with the usual ceremonies.

The retiring President, Dr. W. C. Barrett, with evident emotion, thanked the members of the Association for their kind consideration. He said that though he had doubtless made mistakes, God knew

they were mistakes of the head, not of the heart. It would always be the pride of his life to remember that he had been the President of the American Dental Association.

The President-elect, Dr. W. W. Allport, accepted the chair with brief but well-chosen words. He said that he was neither unmindful of the honor nor ignorant of the responsibilities he was accepting. He hoped that any and all unpleasantness would be forgotten and left with the past, and that their future proceedings would be such as to add to the good name and increase the influence of the profession, and add to that individual reputation which constitutes much of the little we have to leave to our children. He would only promise that he would do all in his power to discharge his duties acceptably.

As his first official act he appointed Dr. E. T. Darby and Dr. A. W. Harlan as Publishing Committee, and Drs. Douglass, Asheville, N. C.; T. T. Moore, Columbia, S. C.; and D. Bland, N. C., a local Committee of Arrangements.

The last items of the final minutes were read and approved, and the Association adjourned to meet at Asheville, N. C., on the first Tuesday in August, 1887.

THE FIRST DISTRICT DENTAL SOCIETY OF NEW YORK.

REPORTED EXPRESSLY FOR THE INDEPENDENT PRACTITIONER.

This Society held its regular monthly meeting on the evening of October 5th, at the rooms of the S. S. White Dental Depot, cor. 32d St. and Broadway, the President, Dr. Wm. Carr, in the chair. After some routine business, the President called for reports of committees.

Dr. C. F. W. Bödecker, chairman of the Clinic Committee, reported a very successful clinic in the amount of work done and in attendance, the latter being from ninety to one hundred persons.

Dr. Pitt presented a boy with erosion, near the edge of the gum, of the four upper incisors and the two lower central incisors, the teeth seeming to be of good material. He was advised to fill the teeth temporarily with oxy-phosphate.

Dr. Nelson, of Boston, exhibited a new pair of pliers, and also some rubber and cloth discs, for polishing, made out of ordinary rubber packing, which will wear better than rubber alone.

Dr. Shumway, of Plymouth, filled a large incisor, the cavity occupying the mesial and cutting surfaces of the tooth. The tooth was devitalized, the pulp-canal cleaned and filled with oxy-phosphate of zinc and cotton.

Dr. Starr exhibited a vulcanizer with a lever, by which the head is fastened upon the vulcanizer with only one screw. He also exhibited Dr. F. H. Lee's improved blow-pipe.

Dr. William J. Younger, of San Francisco, implanted a right upper incisor for an employee of the S. S. White Dental Manufacturing Co. The tooth had been out of the mouth about one and a half years, and the one inserted was extracted at Cooper Institute in the morning. Dr. Younger cut into the alveolus, and fitted the root of the tooth perfectly. The patient said it felt very comfortable, and had been doing good service during the evening.

Dr. Reese showed his method of inserting gold and amalgam fillings by first lining the cavity with oxy-phosphate, and while this is yet soft, inserting the first layer of gold or amalgam.

Dr. A. C. Mellville exhibited some prepared steel which possessed remarkable properties. When ordinary steel is heated to redness and then gradually cooled, it softens, but this remained as hard as glass. The doctor had some porcelain crowns which had been drilled out by means of a diamond, and the holes enlarged by this piece of steel. He also exhibited some new screw posts, and illustrated their manufacture. He also exhibited a pair of forceps for widening crowns. He showed a number of other instruments, such as chisels, excavators, rubber polishing points, and wheels impregnated with emery or corundum, etc.

Dr. C. F. W. Bödecker exhibited a plaster cast representing a double lower jaw, sent to this country by Dr. Keller, of Cologne, Germany.* He also exhibited some aluminum bronze for base plates of artificial teeth, sent by Prof. C. Sauer, of Berlin, Germany.

Dr. Geo. Evans exhibited some bridge-work, introducing a novel feature. It is made of a combination of metal and rubber, with a groove or recess cut upon the buccal or labial portion of the teeth, which will prevent the bands from slipping toward the gum. The bridge can be readily removed by the patient and replaced.

* The history and a photograph of this jaw will appear in a future issue of this journal.

Dr. J. M. Crowell also exhibited a piece of bridge-work, made out of twenty carat gold, enameled with his new body gum.

The President announced that a committee would be appointed for the purpose of arranging an anniversary meeting of the Society.

Dr. Wm. H. Atkinson moved that an invitation be extended to Dr. Younger to give another clinic, showing his method of implanting teeth.

The President called upon Dr. Horatio C. Merriam, who read an elaborate paper on "Gutta-percha and its Uses in Operative Dentistry." The essayist first described the sources, varieties and manufacture of gutta-percha, illustrating his remarks by many specimens, showing the different forms and qualities in which the article is found in the market. By a series of experiments he arrived at the conclusion that gutta-percha will spoil when in contact with the air, daylight or heat for any length of time, and advises that it be kept under water in a dark, cool place. He spoke of gutta-percha as a temporary filling, for which it was highly recommended. In shallow or inaccessible cavities he recommended that the cavity be filled with warm gutta-percha, which should be removed and trimmed to the required shape. The plug should then be moistened with an essential oil and pressed back into the cavity. The essential oil softens the periphery of the gutta-percha, and after drying this resembles a coating of oil paint. It was claimed that this softened coating tends to prevent the destruction of the gutta-percha.

The President then called upon Dr. Edward C. Kirk, who read a paper on "The Etiology of Erosion." The essayist believed the trouble to be purely chemical, but found, as did others, that the disease was most common in people with nervous temperaments. In all cases examined, Dr. Kirk found an extremely acid condition of the fluids of the mouth, and this was very marked under the upper lip, near the cervical portions of the incisor teeth, immediately after rising in the morning. The mechanical theory of erosion he entirely discarded.

Dr. Dwinelle said that the mechanical friction of a tooth-brush would not account for all cases of erosion. He referred to a case spoken of by him in a former meeting of this Society, where the erosion upon the enamel was in every possible direction, so that the mechanical theory could not account for it.

Dr. W. H. Atkinson congratulated Dr. Younger upon the success of his operation at the clinic.

Dr. Younger announced that he had made a specialty of implanting teeth, and had given up other dental operations entirely. He would investigate the physiology of it with the microscope, at some future time. He said that the chances for success in implantation are far better than those of replantation or transplantation. In replanting as well as transplanting a tooth, the socket is usually in an inflamed or necrotic condition. In implantation both the new socket and the tooth are healthy. Speaking about the operation at the clinic to-day, he said that the tooth which he had to use was not as favorable to the case as he would have liked to have it, as the pericemental covering of the roots was wanting in several places. Dr. Younger claims that the vitality of the pericementum is something unusual in comparison with other tissues, as a tooth which has been out of the mouth for many years will again become firm in a new socket by the revitalization of the pericementum.

MEETING OF THE GERMAN NATURALISTS AND PHYSICIANS
AT BERLIN.

REPORTED FOR THE INDEPENDENT PRACTITIONER.

The fifty-ninth meeting of the Society of the German Naturalists and Physicians was held in Berlin, from the 16th to the 25th of September, 1886. For the first time since the founding of the society, a dental section was organized. This, of course, was a natural sequel of the establishment of the dental institute as a department of the University of Berlin, and it is only to be wondered at that there could be a question raised as to the recognition of the dental profession in America, where so many universities have dental departments in connection with them.

The very condensed report which follows deals only with the questions discussed in the dental section, the sessions of which were attended by about seventy members.

Professor Busch, in charge of the clinic for extraction, called for an expression of opinion as to the advisability of extracting the two cuspids, when all other teeth are wanting, for the purpose of securing a better fitting plate.

Nearly all present agreed that perfectly normal cuspidati should never be extracted. When they departed from normality, either in length, color, position or firmness, the indications for extraction appear and increase in proportion to the abnormality.

Herr Herbst spoke about the rotation method. He was very much elated over his reception in America, and said that the rotation method stood as firmly as anything could stand, and was looked upon as the method of the future. It did not receive the hearty applause which was bestowed upon it in America, and the subject was discussed very little, the general impression being that nothing is to be gained by debating the question, for time only will show whether there is anything in the rotary method of introducing gold to warrant its general introduction.

Herr Herbst filled a large cavity involving the mesial and grinding surfaces of the right upper second bicuspid. Considerable time was required for preparing and adjusting the ring matrix, an operation which was accompanied by considerable pain. The filling was completed in about an hour. It appeared to be a good filling, but not perfect in every respect. It was evident to those who had seen Herbst operate two or three years ago, that the rotation method had undergone some changes. One who watched the operation throughout computed that during three-fourths of the time hand-pressure was used, not only for finding weak spots, but for condensing the gold. The use of heavy foils is also a new feature in the rotation method as now practiced by Herbst. There seems to be a great reluctance on the part of his German colleagues to take up the rotation method, and some who have tried it have confessed their inability to master it, and have returned to the popular methods.

Herbst then described a method of lining cavities with gold before filling with amalgam. (See INDEPENDENT PRACTITIONER, August, '86.)

Dr. Witzel stated that the method was employed by Siegmundi twenty years ago, and described in the journals of that date.

Dr. Hillischer confirmed the statement of Witzel. The method had been discarded because experience had shown that teeth so filled became discolored, the amalgam contracting and drawing the gold away from the walls. He much preferred to line weak cavities with cement. It gave support to the walls, and was not drawn away from them by the contracting of the amalgam.

Prof. Miller, of Berlin, spoke about the combination of tin and gold as a filling material. He claimed for it the advantages already stated in the *INDEPENDENT PRACTITIONER*, Vol. V, page 403. He showed a large filling on the grinding surface of a molar made in two and one-half minutes, a compound grinding and approximal filling made in seven minutes, and a tooth-crown, two walls only standing, built up with tin and gold and capped with gold in twenty-five minutes.

Dr. Richter, of Berlin, showed a tooth filled by Miller with tin and gold five years ago, which was recently extracted to correct an irregularity. The pulp was very nearly exposed at the time of filling, so that the tooth was not thoroughly excavated. The dentine had, however, become very hard, and the filling, which was now a hard mass, adhered firmly to the walls of the tooth. Dr. Sachs, Prof. Sauer, Prof. Hollaender, Dr. Göttinger and others, who had used the material, expressed their complete accord with Miller's views as to the ease of insertion and permanency of the tin and gold filling.

Herr Julius Parreidt, of Leipzig, read an article on cysts of the teeth and jaws. He combated the view of Magitot, that all cysts of the jaws are necessarily tooth-cysts. They can be formed in the jaw as well as in other bones, though this seldom happens. Parreidt retains the classification of Magitot in follicular and periosteal cysts; he had treated twenty-five cases, of which twenty-three were periosteal and two follicular. Periosteal cysts arise from a chronic irritation of the pericementum. The treatment consists in the removal of the tooth and keeping the cavity clean, the cyst healing of itself. The follicular cysts require an operation.

Prof. Busch remarked that he had seen twenty periosteal cysts at the clinic, but had not yet met with a case of follicular cyst.

Dr. Hillischer, of Vienna, spoke about narcosis from a mixture of oxygen and nitrous oxide. He had applied the mixture in nearly 1,000 cases, and had secured better results than could be obtained with nitrous oxide alone. He thought it less dangerous, and hoped, by being able to continue the inhalation for a long time, that the mixture would eventually be employed for extended surgical operations. He exhibited an apparatus for inhaling the mixture under normal pressure, as well as for mixing the two gases at the time of inhaling, in any desired proportion. The mixture must not be

allowed to stand any length of time, since the higher oxides of nitrogen are formed.

Prof. Busch was much pleased with the apparatus, but doubted if the mixture could ever be employed for long operations. Oxygen always diminishes the narcotic power of nitrous oxide.

Prof. Miller spoke on the restoration of the contour of carious teeth by means of porcelain. He mentioned three cases in which porcelain could be employed to advantage as filling material:

1. On the labial surface of incisors and cuspids.
2. For restoring the corner or entire cutting edge of incisors and cuspids.
3. For restoring the external walls of bicuspid.

In the first case, the piece of porcelain is first fixed in oxy-phosphate cement, and then filled around with gold; in the second and third cases gold is not necessary. Prof. Miller made a number of operations of the second and third class in 1879, which are still holding perfectly well. He recommended the method very highly, especially for cases of the second class. The method of preparing the cavities and grinding the porcelain pieces and inserting them, were explained and demonstrated.

Prof. Sauer exhibited a new apparatus for correcting protruding upper jaws. The object of the contrivance was to raise the articulation so that the lower incisors do not occlude with the upper, the lip then pressing the teeth back without further aid.

Dr. Eysell, of Cassel, spoke on the contraction of the nasal cavity produced by the narrowness of the palate and abnormal position of the teeth.

Herr Ritter, of Berlin, read an article on Antiseptics in Dentistry. He called attention to the fact that numerous cases of suppurative inflammation, necrosis, etc., might be avoided by a proper attention to the antiseptic treatment of wounds produced in the mouth by extraction or otherwise. He is in the habit of disinfecting the gums before each case of extraction, and afterwards, particularly in unclean mouths, of treating the wound antiseptically.

Prof. Miller called attention to different pathogenic micro-organisms which he had found in the mouth, and agreed with Ritter, that wounds in the oral cavity should be treated with the same precaution as to antiseptic conditions which are taken in treating wounds in any other part of the body.

Drs. Witzel, Schreiber and Hillischer were of the same opinion.

Prof. Sachs thought that the treatment required too much time, the object being to relieve the patient of pain and anxiety as quickly as possible.

Prof. Busch spoke of the preparation of tooth-sections. He had tried the various methods in use, and had experienced great difficulty in cutting teeth, particularly those with folds of enamel. He now uses a thin metallic disk, which, while in rotation, is fed with a paste of corundum powder and water. With this the hardest teeth may easily be cut.

Prof. Busch further spoke on supernumerary and missing teeth of the human denture. He expressed the opinion that most supernumerary teeth are to be regarded as originating in fragments of tooth-germs. Individual cases might, in accordance with the theory of descent, be looked upon as a tendency to return to the original type.

Herr Morgenstern, of Baden-Baden, presented a short communication on tooth-grafting, and introduced a patient for whom he had, seven years previously, performed the operation with great success.

Prof. Miller passed around a photo-micrograph, showing the manner in which the attachment of the reimplanted tooth takes place. He laid great stress upon the necessity of preserving the pericementum, since the true attachment can take place through that alone.

Herr Zimmermann related the case of a tooth which was extracted by mistake, and in the hurry to get it back again was put in "wrong side to." The operation was, however, an entire success, owing to the perfect preservation of the pericementum.

Prof. Sauer was in favor of resorting to reimplantation only in extreme cases.

Dr. Cunningham, of Cambridge, was of the same opinion. He described a splint for reimplanting teeth, consisting of a mass of oxy-phosphate cement pressed in a soft state around the reimplanted and the neighboring tooth, and held with the thumb and finger till it hardens. He referred to experiments which showed that a reunion takes place between the vessels of the pulp and those of the subjacent tissue.

Herr Morgenstern stated that this was not the case. The pulp mummifies, and a pseudo-pulp grows into the root-canal through the apical foramen.*

Herr Warnekras, of Berlin, gave his experience in the use of cocaine for extracting teeth. He injects half of a Pravasz syringe full of 20% solution, in three portions, the first along the inner root (or inner side of a one-rooted tooth), the second along the outer root, the third and largest portion into the vascular tissue at the point of the root. He then waits five minutes before extracting. He claims to have accomplished wonders in this way. He made three extractions at the clinic, which were not painless but in which the pain was evidently reduced.

It was urged against the use of cocaine that the extraction is not completely painless, and that the injection itself is quite painful, and, most of all, that it is dangerous. Many cases was cited where intoxication with alarming symptoms was produced by the injection of much less than one decigram (the amount used by W.).

THE HERBST CLINICS IN AMERICA.

REPORTED EXPRESSLY FOR THE INDEPENDENT PRACTITIONER.

(Continued from page 645.)

CLINIC GIVEN WEDNESDAY, JULY 28TH, AT THE NEW YORK
COLLEGE OF DENTISTRY.

Dr. Herbst filled for Dr. Batterman the mesial surfaces of the right and left lower centrals. For a matrix he employed the thin piece of watch-spring previously described. He also explained and exhibited the general principles of the application of matrices.

*This is undoubtedly the case with dogs' teeth, which have a very large foramen. Further experiments may be necessary to prove that it is also true of human teeth.—*Rep.*

CLINIC GIVEN THURSDAY, JULY 29TH, AT THE OFFICE OF
DR. C. F. W. BÖDECKER.

Mr. M—— was the patient for whom Dr. Herbst contoured a right upper central incisor, the cavity involving the mesial surface, including the cutting edge. A matrix was made of shellac, into which two pieces of steel spring were inserted, one corresponding to the mesial surface, the other to the cutting edge of the cavity. The introduction of the gold occupied twenty-two minutes. Dr. J. M. Welch, of St. Paul, Minn., took the chair, for whom Dr. Herbst filled a left upper central in the distal surface, and a left upper lateral in the mesial surface. There were present at this clinic Drs. E. P. Brown, J. M. Welch, and C. F. W. Bödecker.

CLINIC GIVEN SATURDAY, JULY 31ST, AT THE OFFICE OF
DR. C. F. W. BÖDECKER.

Dr. Herbst filled for Dr. Bödecker a right lower second molar. The cavity, which was prepared July 29th by Dr. E. P. Brown, involved the mesial and grinding surfaces. The dentine was found to be extremely sensitive, when the Herbst obtunder was applied with success. Upon the sensitive part of the dentine, near the cervical border of the cavity, a thin layer of tin was placed at the request of the patient, which has proved very successful in preventing the pain caused by thermal changes. The introduction of the gold occupied twenty-seven minutes. There were present at this clinic Drs. Wm. H. Atkinson and G. A. Mills.

CLINIC GIVEN MONDAY, AUGUST 2D, AT THE MEETING OF THE
AMERICAN DENTAL ASSOCIATION AT NIAGARA FALLS.

Dr. Herbst filled for Dr. J. S. Marshall, of Chicago, a right lower second molar on the grinding surface, and a right lower second bicuspid on the distal and grinding surfaces, using for the latter operation the German-silver band matrix.

Dr. Herbst then attempted to fill for Dr. —— an upper central incisor, the cavity occupying the labial surface of the tooth. The rubber dam was applied, which was held above the cavity by Dr. Herbst's clamp, made for that purpose, but in this instance it proved unreliable, as the next tooth was an artificial crown, and the metal

strip, which was pushed between the teeth, gave away during the introduction of the gold, when saliva entered the cavity and prevented the completion of the operation.

All the specimens and little inventions of Dr. Herbst, which have been previously described, were exhibited and highly appreciated by every one.

CLINIC GIVEN TUESDAY, AUGUST 3D, AT THE SAME PLACE.

Dr. Herbst filled for Mrs. H—— a right lower second bicuspid, the cavity occupying the distal and grinding surfaces. In this patient's mouth there were also two very large fillings inserted by Dr. Herbst at previous clinics, viz., a left lower second bicuspid filling, occupying the distal and grinding surfaces, and a right lower canine, involving one-third of the mesial, one-third of the distal, and one-eighth of an inch of the cutting surface of the tooth. These fillings were carefully examined by many and found perfect.

CLINIC GIVEN FRIDAY, AUGUST 6TH, AT THE OFFICE OF
DR. C. F. W. BÖDECKER.

Dr. Bödecker built up for Mrs. W—— a right lower central incisor. The tooth had been ground away to the edge of the gum in front by its antagonist in the upper jaw, but the lingual wall, with the exception of about one-eighth of an inch of the cutting edge, was left intact. Before the cavity was excavated a matrix of shellac was prepared, to which three pieces of steel spring were adjusted, one on each side of the proximate surface and one over the cutting edge of the tooth to be filled. After the excavation of the cavity and the application of the rubber dam, the contour was restored with gold. In the first layers No. 0 Wolrab cylinders were used, while the rest was built up with No. 30 rolled gold, taking care to roughen and carefully examine every layer before another was introduced. The introduction of the gold occupied about an hour. The filling, when finished, was perfect and solid. The gentlemen present were Drs. Herbst, Wm. Carr and Degenhard.

After this filling was finished, Dr. Herbst filled for Dr. Ch. Degenhard a right lower molar, the cavity occupying the cervico-buccal portion of the tooth.

(TO BE CONCLUDED.)

Editorial.

TO JUNIOR DENTISTS. NO. VII.

TAKING IMPRESSIONS OF THE MOUTH.

My Dear Doctor:

Your letter asking advice in the taking of impressions of the mouth is at hand, and I answer it thus publicly in the hope that others may derive some benefit from what I have to say. I confess that I do not know half as much about the subject as many, but if they keep their knowledge to themselves instead of imparting it through the journals, it only remains for one less qualified to give what information he can.

The first and most important step in the making of an artificial denture is to secure a perfect impression of the parts to which the plate is to be fitted, for it matters not how excellent may be the workmanship of the finished piece, it can never be of any practical utility unless adaptation be perfect. All the polishing and finishing which man is capable of giving a denture will not serve in place of accuracy of fit. In speaking of taking impressions, then, I am going back to the initial point and dealing with primal principles.

The securing of a proper counterpart or *fac-simile* of the arch of a mouth of uniform hardness throughout, with no teeth remaining, is a comparatively simple matter. But when there are teeth remaining in the jaw, some of them with bell-shaped crowns, the alveoli absorbed away for one-third the length of the roots and the teeth possibly inclined at an angle several degrees removed from the perpendicular, or where, in a jaw that has long been without teeth, the central portions of the arch are perfectly unyielding while the alveolar ridge is soft and flexible, the obtaining of a proper working model is a matter requiring a high degree of skill. In the former case, to obtain a correct impression of the tissue about the cervical portions of the teeth and to get a perfect model of the irregular teeth themselves, is a problem that few have quite solved. I know many skillful dentists who content themselves with

an approximately correct model, which they carve to their idea of the true condition. I need not say that this cannot be exactly accomplished.

When there are soft and spongy portions of the arch in full cases, it is not sufficient to obtain a reproduction in plaster-of-paris or metal of the tissues in their normal state of rest. If there be a hard median ridge with a yielding border, the pressure of occlusion upon one side in mastication will cause the dislodgment of the plate upon the opposite side, and so there will be a continuous rocking of the denture upon this immovable central ridge, and it will be a failure. These two conditions are the ones which give to dentists the greatest annoyance, and it is to these complications that I shall devote my principal attention.

There are a number of different materials used for the securing of an impression of the mouth, the principal of which are plaster-of-paris, wax, gutta-percha, and the various forms of modeling compound. While each presents certain advantages in peculiar cases, I myself have long since abandoned all except the first, save that in a very few exceptional instances I sometimes employ the last. Wax would, without doubt, give the most perfect impression, were it possible to avoid the displacement of the thin portions in withdrawing it. Gutta-percha would be admirable only for its fatal tendency to "draw." Modeling compound, if left to harden in the mouth, makes a capital material, but it is impossible to remove it from around bell-shaped teeth without destroying the adaptation. Plaster-of-paris alone, when it has set, is free from these objections, but the difficulty in partial impressions is to withdraw it from the mouth, while in full cases, where there is a hard center with a yielding ridge, it is not possible with it alone to obtain a model that shall give a properly balanced denture. Twenty years of experience in taking impressions has enabled me to overcome some of these difficulties, and I will give you the results of those years of defeats and triumphs.

First, let me speak of the taking of partial impressions. It is absolutely essential that you possess a good stock of impression cups, or trays. For years I have bought every new form that has been offered, and every one has, at one time or another, found its appropriate place. I use, however, none but those made of britannia metal. An inflexible, unyielding cup has no place in my

laboratory. But of the ordinary forms I have a large number, and I seldom take an impression without in some way changing the shape of the selected cup, either by cutting away a portion, or by bending it so that it will still better fit about the teeth. When, for the time, I am through with plate-shears and plyers, some common impression wax is warmed and made pliable in hot water, a sufficient quantity is placed in the cup and a wax impression is secured. This is the work of but a moment, and if this shows me that my cup is not properly fitted, it is again bent or cut away wherever the impression shows me that there exists the necessity.

If changes have been necessary, I place more wax in the cup and take another impression, and this is continued until I get the cup to my liking, when a final wax impression is taken, the wax being quite soft and the cup pressed firmly against the teeth as far as it will go. This is removed and, while it is yet pliable, the outer rim is bent back to place, if it be displaced, and somewhat beyond, the marks of the cup being my guide. This will allow a little space between the outer portion and the teeth, or the alveolar border, when it is replaced in the mouth.

I now take the impression to the laboratory, and with a hot knife I trim away all the surplus of wax, outside the teeth cutting down to the edge of the cup while the rim is left higher opposite the space to be occupied with artificial teeth. With a knife having a narrow blade I enlarge the sockets made by the natural teeth, until if replaced they would not be in contact with the wax, save upon the summit of their crowns. I also cut away the wax in the center of the arch to the depth of an eighth of an inch or more, and to a line about a quarter of an inch from the teeth and the posterior border of the wax impression. It is then, with the back of my wax knife, scarified all over the palatal portion, and longitudinally within the outer border and in the sockets made by the natural teeth. I hold the cup over a Bunsen burner or alcohol lamp until the metal is heated sufficiently to melt the wax a little over the entire surface of the cup, when it is held under the cold water faucet until cold and hard.

If this has been carefully done, I now have a cup that is perfectly adapted to my case, made of a material which will yield a little when I wish it to do so. Just enough of a rather thin batter

of plaster-of-paris is now placed in it to nicely fill my manufactured cup, but which will allow no surplus to embarrass me, and this is carried quickly to the mouth. As soon as the plaster remaining in the mixing-cup will break with a clean fracture, and while it is yet soft enough to be a little waxy, I commence my manipulation for its removal, and just here is where the key-note of success is sounded. The operator must learn by experience at just what point to begin. If he commence too soon his plaster will crush, and his impression will be destroyed. If he delay a moment too long he will not, in difficult cases, be able to remove it without destroying it.

There will be instances of converging teeth from between which it will be impossible, without practical destruction of the impression, to remove the plaster-of-paris. In such very exceptional cases I place a piece of softened modeling compound in the space, which is allowed to remain until after the impression is taken. It is then removed and put in position before running the cast.

I commence removal by gently "working" the cup, at first up and down until it commences to yield, and then laterally until it is quite loose, when it is easily withdrawn. It is impossible to give you exact directions for this process. Your own good judgment and a little experience will guide you. Of course the plaster will not allow the cup to be withdrawn, in difficult cases, until it has been fractured, and my object is to break it away from undercuts and from bell-shaped teeth, crowding it back into the wax, which will yield for that purpose, until the whole can be removed. The outer rim will, in many cases, be quite broken away from the rest, and now are apparent the advantages of using the wax.

First. It gives me a cup that is exactly adapted to the case, and one which requires but a minimum amount of plaster.

Second. It affords me a yielding base for my plaster, and allows it to break about the teeth without comminution, at the same time retaining all the pieces in near apposition and preventing their loss.

Third. It affords me an unfailing guide in replacing any broken portions.

The scarification assists the adherence of the plaster to the wax and precludes their separation, besides assisting me in replacing broken pieces. The melting of the wax to the cup prevents the

separation of the whole and enables me to use considerable force in removal, if it be necessary.

The essential point is to know just when to commence the removal. If it be done at the right moment, the whole is easily accomplished, and a perfect impression will be secured in cases that would seem to be impracticable. But a moment too soon or too late will end in a failure. Ten persons will, however, commence too late, for one who begins too quickly. Remember, your plaster must not be quite hard.

I need not say that, to obtain a perfect impression of the cervical borders of teeth, it is essential that they be clean and as dry as you can get them. Look to that before putting the cup in the mouth.

I have taken up so much space already that I can but allude to the second class of difficult cases—those in which, with a hard median portion, the sides of the vault, or the summit of the alveolar ridge, are spongy and soft. For these cases, in taking the wax impression, the material is used in a firmer state, so that a little pressure is necessary to force it to place. The edges only of the rim are bent back a little, and the surplus is trimmed away. From only such portions as covered the hard, unyielding parts of the mouth, the wax is removed to a depth dictated by the amount of difference in the yielding character of the tissues, when it is scarified, melted to the cup, and a rather stiff batter of plaster used, the cup being pressed firmly to place and held so until the plaster is firmly set. This will produce sufficient pressure upon the soft tissues to condense them all that is necessary.

The advantages of the wax in these cases are :

First. The ability to produce pressure upon the soft tissues.

Second. There being but little plaster used, the operation is much neater.

Third. The plaster is confined just where it is wanted.

Fourth. The folds of the buccal and lingual tissues, which are so likely to get beneath the cup when plaster only is used, are invariably pushed to one side.

Fifth. The stratum of plaster-of-paris is nearly uniform in thickness all over the mouth, and hence there is no unequal expansion in the setting, or crystallization.

END OF THE VOLUME.

With this number Vol. VII is brought to a close. The index for the year is sent out with it, and we commend that to the examination of our readers. The list of original contributors comprises some of the best known names in dentistry, and a study of the titles of the original papers published during the year will show that there are many articles which will take their place in the permanent literature of the profession. The volume is larger than any of its predecessors, and comprises more than 700 pages of reading matter, every line of which was carefully prepared expressly for this journal. Think how much of labor the preparation of such a volume implies, for there has been no reaping of that which another has sown, no reprinting of articles from other sources.

Has not the journal well earned its subscription price? Not one number during the year has been a day behind in its issue. It has been prompt in its appearance, and its subscribers know upon what precise day and by what particular post it may be expected to arrive. Ought it not, therefore, to anticipate equal promptness from those whom it visits? Yet there are a number who are indebted to it, although they must be aware that their subscription money is the only thing that will enable it to continue its appearance. They know that its publishers have no selfish ends to compass, but are honestly and conscientiously trying to serve a profession which they love. They have a right, then, to expect some appreciation of their efforts.

With this number will be sent out bills to those who are indebted for subscriptions, and we ask you, reader, if such an one be enclosed in your copy, to remember that we are waiting for that which is justly our own. Send to the Editor at Buffalo, in postal notes or orders, or drafts on New York, what you owe.

And now, what shall we say for the coming year? If the accomplishments of the past will not speak for the journal, it is folly to make promises for the future. We can only say that we honestly believe that Volume VIII will be better than Volume VII. Send your subscription for the new volume and see if it is not.

It is a matter of pride to each one of the publishers that very seldom does any one write asking that his journal be stopped. There is, at least upon our part, a lively affection for every reader, and we earnestly hope that the feeling is mutual. When for some

good cause it becomes necessary to drop a name, it seems like parting with a dear friend. May these partings grow continually less.

There is one thing that the Editor desires to impress upon the mind of every reader, and that is the fact that, although his is the name that is pushed to the front by his associates, his is not the credit for all the good work which the journal does. If the profession could know of the unselfish and exhaustive labors that are performed by others of the publishers, of the liberality with which they at times put their hands in their pockets and bring forth for the good of their profession and the journal which they love, but through which they expect to compass no selfish ends, it would convince every dentist that there is good in the world of which he, perhaps, had no knowledge. The Editor of this journal is cognizant of many such acts that could be prompted by none but the noblest sentiments, and he alone knows how much of true, generous, professional feeling has often existed in the turmoil of daily professional life.

Do you think, dear reader, that we are indulging in unwarranted sentiment and basely romancing for an ulterior purpose? You never were more mistaken, if you do. There is a great deal of good in this world which men will not see, and more which is never brought to the light of day. The editor has but been taking into his confidence a class of men who seem very near to him—the subscribers to THE INDEPENDENT PRACTITIONER.

AND YET ANOTHER JOURNAL.

Last month we printed the announcement of *The Western Dental Journal*, to be published in Kansas City. Since then we have received the prospectus of *The Dental Review*, a monthly journal to be published in Chicago. It is an encouraging indication when first-class professional magazines multiply, for it shows that due and proper attention is being paid to that literature without which there can be no organized profession.

The prospectus of the new journal gives no hint as to who are to be its editors, but if it was desired that it should be conducted in an entirely impersonal manner the secret has not been well kept, for uncontradicted rumor organizes the staff as follows :

Editor in Chief, Dr. A. W. Harlan.

Associate Editors, Dr. J. G. Reid, Dr. J. W. Wassall, Dr. Louis Ottofy and Dr. Davis.

This is a strong corps, and one, we doubt not, that will be entirely competent to wipe out the stain which, the prospectus intimates, rests upon our professional periodical literature—"a deplorable lack" of editorial ability, or of editorial energy and wisdom. It is promised that the present editorial inefficiency of our journalism will, in some measure at least, be corrected in *The Review*. This enables us to take a more optimistic view of the future, and we are certain that those undisciplined editorial tyros, Taft, White, Gorgas, Watt, *et al.*, will with us eagerly watch this Star in the West, until the journalistic standard is elevated away out of the reach of all the present editorial slow-coaches, who will have no resource save to profit by the extended experience and knowledge of the *Review* staff.

But, seriously, we cannot have too many good journals, and there is ability sufficient and a field broad enough in the West to make of the new one a shining success. It is to be entirely independent, and that is, to our mind, a good feature. It is projected by enthusiastic, earnest men, who really have something to say, and that is another. We sincerely hope that it will be adequately sustained, and that the editorial chair will be voluptuously cushioned, with ne'er a bent pin of captious criticism in it. We shall heartily welcome the new journal to an honorable place in dentistry.

OUR BOOK TABLE.

The usual book notices for this month are, greatly to our regret, crowded out. Among those which were prepared for the printer was a review of the initial (November) number of the new Chicago Dental Journal. Also notices of the revised and enlarged editions of Richardson's *Mechanical Dentistry*, Taft's *Index of Dental Literature*, and the *Physicians' Annual Visiting List*, all from P. Blakiston, Son & Co., of Philadelphia. Besides these, there are books from other publishers upon our table, which shall have attention at the earliest possible date.

Current News and Opinion.**FIRST DISTRICT DENTAL SOCIETY OF THE STATE OF NEW YORK.**

A special meeting of this society was held in New York, November 19th. This was the largest and most enthusiastic meeting of that society which was ever held, the audience numbering nearly two hundred. It was called to hear Dr. Kingsley read a paper entitled "Dentistry Not a Specialty in Medicine." This address was, in substance, the same as that by the same author, delivered before the New England Society in October, and which will appear in *THE INDEPENDENT PRACTITIONER* for January. At the close of the reading the sentiments advanced were warmly endorsed by Drs. Parnly Brown, Atkinson, Rich, and Dwinelle.

The following resolutions were offered by Dr. Wm. H. Dwinelle, seconded by Dr. S. G. Perry, and adopted without a dissenting voice :

WHEREAS, Dentistry in America is practically an independent profession and not subordinate to any other, and—

WHEREAS, All the greatest attainments in dental science have been reached through separate literary, educational, and scientific organization, and—

WHEREAS, Dentists throughout the world look to their professional confreres in America for the further advancement of dental science; therefore,

Resolved, That in the interests of dentistry as an independent profession, immediate steps be taken looking to the formation of an INTERNATIONAL DENTAL CONGRESS, to be held in this country, and to which every reputable dentist in the world shall be entitled to admission and to all its privileges.

Resolved, That a committee of ten be appointed by the President, whose duty shall be to co-operate with similar committees from other societies, for the purpose of establishing such a Congress at as early a date as arrangements can be made which will make such a Congress a credit to the dental profession in America.

Resolved, That we respectfully recommend that every dental society in the world appoint a similar committee, and thus bring about harmonious relations and universal support.

The President subsequently appointed as members of the committee of ten, Drs. W. H. Dwinelle, A. L. Northrop, C. E. Francis, Frank Abbott, W. H. Atkinson, N. W. Kingsley, S. G. Perry, E. A. Bogue, W. A. Bronson and W. W. Walker.

At a union meeting of the Fifth, Sixth, Seventh and Eighth District Dental Societies, held in Rochester, October 26th and 27th, a paper was read by Dr. C. T. Howard upon the Relations of Dentistry to Medicine, and Dr. Kingsley presented the paper which was subsequently read before the First District Society.

Resolutions substantially the same as those passed by the First District Society were offered and unanimously adopted.

BALD AND TOOTHLESS.

In a facetious leading article, called forth by the assertion of Mr. Virgil G. Eaton and Dr. William A. Hammond that our descendants of a thousand years

hence will be destitute of hair and teeth, the *Journal of the American Medical Association* says :

Will this be an unmitigated evil to posterity? The dental college will then live only in history, and the barber, like Othello, will find that his "occupation's gone." The medical literature of that day will perhaps contain a short reference to a disease mentioned in the infant history of medicine as "Tooth-ache," and doubtless some medico-historian will show that its disappearance from the earth was caused by a change in the meteorological conditions of the planet in the year 2900. The Professor of the History of Medicine will no doubt lecture learnedly on the fatal affection of the nineteenth century, known as "dentition," and will ascribe its disappearance to improvements in sewer pipes and house drainage. He will look up *alopecia* in the medical dictionary, and finding that it is so called because foxes were supposed to be afflicted with it, will marvel greatly that even so late as the twentieth century the doctor could not cure fleas. The archæologist will perhaps find an old toothbrush, and straightway construct the wondrous animal which possessed such a tail. And what a very treasure it will be to him when, in excavating the site of an ancient barber shop, he finds a bottle with the curious inscription : "Scalpine: positive cure for baldness." Perhaps some daring scientist will try some of it on a square centimeter of his own glossy scalp, and regret it for the remainder of his days. False teeth, teething rings and hairpins will be deposited in honorable positions in museums. No doubt Paracelsus will then get the credit of having invented the dental engine, and given it a name which, like many others of the nineteenth century, has no signification, and no other merit than length. In that day an infant king of Spain will not have a dentist appointed for him before he has taken leave of the last three inches of his umbilical cord. Roast beef will be a thing of the past, and the earth will be dotted over with mush factories.—*Practitioner and News*.

CONNECTICUT VALLEY DENTAL SOCIETY.

At the annual meeting of the Connecticut Valley Dental Society, held at Holyoke, Mass., October 14th and 15th, the following officers were elected for the ensuing year :

President—E. A. Stebbins, Shelburne Falls, Mass.

Vice-Presidents—J. N. Davenport, Northampton, Mass.; F. W. Williams, Greenfield, Mass.

Secretary—George A. Maxfield, Holyoke, Mass.

Assistant Secretary—A. J. Nims, Turners Falls, Mass.

Treasurer—W. H. Jones, Northampton, Mass.

The semi-annual meeting for 1887 will be held at Montreal, P. Q., next June, and a cordial invitation is extended to members of the profession to attend. Special arrangements will be made with railroads and hotels for reduced rates, and an attractive programme will be provided. Additional notice will be given as early as next April.

GEO. A. MAXFIELD, D. D. S.,

HOLYOKE, Nov. 1, 1886.

Secretary.

AMERICAN ACADEMY OF DENTAL SCIENCE.

The annual meeting of this society was held at Young's Hotel, in Boston, Wednesday, November 10th. The annual address was delivered by J. N. Farrar, M. D., D. D. S., of New York. (It will be published in full in *THE INDEPENDENT PRACTITIONER*.—ED.)

The officers of the preceding year were all re-elected, as follows :

President—Dr. J. H. Batchelder.

Vice-President—Dr. C. P. Wilson.

Recording Secretary—Dr. E. E. Hopkins.

Corresponding Secretary—Dr. E. B. Hitchcock.

Treasurer—Dr. E. H. Smith.

Librarian—Dr. H. C. Merriam.

Committee of Arrangements—Dr. C. P. Wilson, Dr. E. C. Briggs, Dr. J. S. Mason.

NEW ENGLAND DENTAL SOCIETY.

The officers elected at the last meeting of this society were :

President—Dr. G. A. Young, Concord, N. H.

First Vice-President—Dr. C. W. Clement, Manchester N. H.

Second Vice-President—Dr. C. A. Brackett, Newport, R. I.

Secretary—Dr. A. M. Dudley, Salem, Mass.

Assistant Secretary—Dr. A. H. Gilson, Boston, Mass.

Treasurer—Dr. G. A. Gerry, Lowell, Mass.

Librarian—Dr. E. O. Kinsman, Cambridge, Mass.

Executive Committee—Dr. A. M. Dudley, Dr. L. D. Shepard, Dr. R. R. Andrews, Dr. H. A. Baker, Dr. Geo. C. Ainsworth.

The next meeting, at Boston, will be the 25th anniversary and a big meeting, occurring in October, 1887.

"THE OLD RELIABLE."

Ambrose Lawrence, M. D., originator of the famous "Lawrence's Amalgam," has made The S. S. White Co. agents for the sale of his filling, while he devotes his attention solely to its production.

Many years ago the venerable doctor practiced dentistry in Lowell, Mass., and for a time was mayor of that thriving city; but the demand for his "stuffing" became so great that he gave up dental practice, migrated to Boston, and became one of the spokes of the "Hub," making his revolutions in regular time and order.

The doctor, like his amalgam, is—well, *somewhat* "old," but exceedingly "reliable," and we are pleased to learn that he is as hale and robust as any other "boy" of his size that can be brought to the front.

Long may he live and prosper, and in his battles with other amalgams may he show his sterling metal, and, while he lives, "never give up the ship."

C. E. F.

THE ODONTOLOGICAL SOCIETY OF WESTERN PENNSYLVANIA.

This society will hold its next regular quarterly meeting at the office of Drs. Libbey, corner of Sixth Avenue and Smithfield Street, Pittsburgh, on Tuesday, December 14th next.

PROGRAMME.

ESSAY—"Odontalgia and its Treatment." By Dr. L. Depuy. Discussion opened by Dr. Geo. Elliott.

ESSAY—"Recent Advances in Dental Art." By Dr. H. W. Arthur. Discussion opened by Dr. J. A. Libbey:

Essay—"Abscesses and Their Treatment." By Dr. J. W. Boisol. Discussion opened by Dr. Sophy Feltwell.

There will also be an operative clinic, if time permits.

C. V. KRATZER, Secretary,

CAULK'S DENTAL ANNUAL.

For statistics of dentistry the members of the profession have learned to consult this excellent compilation. Number V, to be published January 1, 1887, will be of more than usual interest and value, while the edition will be larger than that of any of its predecessors. Address Dr. L. D. Caulk, Camden, Del.

ACCORDING TO THE *Iowa State Medical Reporter*, diplomas from the following list of colleges will not be accepted by the Iowa State Board of Health, recently organized:

American Eclectic College, Cincinnati; American Health College, Cincinnati; American University of Pennsylvania (Buchanan), Philadelphia; Beach Medical Institute, Indianapolis; Bellevue Medical College, of Massachusetts; College of Physicians and Surgeons, Buffalo; College of Physicians and Surgeons, Milwaukee; Eclectic Medical College, of Philadelphia; Edinburg University, Chicago and St. Louis; Excelsior Medical College, Boston; Hygeo-Therapeutic College, Bergen Heights, N. J.; Joplin Medical College, Joplin, Mo.; Livingston University, Haddenfield, N. J.; Medical Department of the American University of Boston, Boston; New England University of Arts and Sciences, Manchester, N. H.; Penn Medical University, Philadelphia; Philadelphia University of Medicine and Surgery; Physio-Eclectic Medical, and Physio-Medical College, Cincinnati; St. Louis Eclectic Medical College; St. Louis Homœopathic Medical College; Physio-Medical Institute, Marion, Ind.; American Anthropological University, of St. Louis; Medical Department of Drake University, Des Moines; and King Eclectic Medical College, Des Moines, Iowa.

—*Kansas City Medical Index.*

IF THE SIMPLICITY OF PRAYER be its chief merit, then a colored preacher, who offered up a supplication at the Citadel Green on the night of the great earthquake, is far ahead of many of the courtly and polished theologians of the day. The following prayer, which is by many degrees more eloquent than the prayer of Ajax for light, was made before a terrified crowd of colored and white

people on the Green on the night stated, and, considering the circumstances and the peculiar notions of the colored people on such matters, the preacher will be acquitted of anything like a charge of irreverence. He said, raising his hands towards the sky :

“ Do, Lawd, come down an’ go ’mong yer people, for dey is terrify—dey am skeerd like; dey dunno which way to tun over: ’cause dey tink you am bex wid um. Come down, please, sa, an’ walk roun’ wid um; tek um by de han’ an’ tell um you ain’ bex; an’ if yo’ can’t come, sen’ you’ Son. *But, Lawd, dis no time fo’ chillun.* So come, yo’self, if you can, please, sa! ”

The above is a reproduction of the prayer just as it was delivered, without an attempt at amplification or interpolation. It is easy to see how the colored divine, deriving his knowledge of the character and power of the Saviour from pictures in which he is represented as an infant, should have said exactly what he did say. The preacher’s idea was that the case required the immediate attention of what he conceived to be the only and supreme authority.—*Charleston News.*

DR. A. D. MCGREGOR speaks highly of boric acid as a topical application in the unhealthy condition in which we frequently find the mouth, tongue and teeth in severe cases of typhoid fever. He says, in *The British Medical Journal*: The mouth is hot, the lips dry, cracked, and glued to the sordes-covered teeth by inspissated mucous and saliva; the tongue dry, or even glazed and hard, brown or black, crusted, with a fetid fur. Under these circumstances, a pigment containing boric acid (30 grains), chlorate of potassium (20 grains), lemon juice (5 fluid drachms), and glycerine (3 fluid drachms), yields very comforting results. When the teeth are well rubbed with this, the sordes quickly and easily becomes detached; little harm will follow from the acid present. The boric attacks the masses of bacilli and bacteria, the chlorate of potassium cools and soothes the mucous membrane, the glycerine and lemon juice moisten the parts and aid the salivary secretion.—*Medical Record.*

THE FLORENCE MANUFACTURING CO., as may be learned by a reference to their advertisement, have prepared for the holiday trade one of the neatest articles in the market. It consists of an ornamental case containing a brush, comb and glass, which would make an acceptable present to any one, and is especially adapted to office use. Few can realize the favorable impression made upon patients by an elegant attention to their minor wants, and if one of these sets were laid upon the dressing case of the office, it could not but be pleasing to any lady patient.

THE CENTRAL DENTAL ASSOCIATION OF NORTHERN NEW JERSEY holds its regular meeting on the third Monday of each month, at the rooms of the Board of Trade, Newark. All regular dentists are cordially invited to be present at any time. It is expected that the December meeting will be addressed by Dr. W. C. Barrett, of Buffalo; that of January, by Dr. A. W. Harlan, of Chicago.

S. C. G. WATKINS, Chm’n Ex. Com.

HARVARD UNIVERSITY has just conferred the honorary degree of LL. D. upon Dr. J. S. Billings and Dr. S. Weir Mitchell. The high compliment thus paid to Dr. Billings is a just recognition of his eminent services to the science and literature of his profession, and a fitting rebuke to those gentlemen of the medical press of the west and south-west who have attempted to belittle Dr. Billings' fair name and fame by cheap criticisms and vulgar aspersions. We congratulate Dr. Billings upon the reception of this well-merited honor at this time from the oldest and most eminent University of the United States.—*Maryland Medical Journal*.

To all of which we most heartily subscribe.

MYRA AND BELFANTI (*Centralt. f. Klin. Med.*, 1886, No. 26) have succeeded in detecting two digestive ferments in normal human urine. One is the already well-known digestive ferment, which is active in an acid solution; the other displays its activity in an alkaline solution only. Both ferments produce only small quantities of peptone. The first ferment is found also in pathological conditions, typhoid fever, gastric cancer and Bright's disease. The ferments have nothing whatever to do with the putrefactive processes. The detection of these ferments, the authors believe, is of considerable importance in the question of the pathological significance of peptonuria or propeptonuria.—*New York Medical Journal*.

DR. GEO. L. FIELD, of Detroit, has for years been using a little device that has excited the envy of metal workers. It is a machine for turning the rims of gold and platina plates, and it does its work much better than it can be done by hand, and that, too, without any danger of injuring the fit. At the solicitation of some of those who had seen it, he has finally had a few made from his patterns for those who especially ordered them, and it is possible that he could get more if they were desired. The one belonging to the editor of this journal will certainly never be for sale as long as he is able to use it.

THE PARTICULAR office of flies appears to be the consumption of those dead minute animals whose decaying myriads would otherwise poison the air. It was a remark of Linnæus that three flies would consume a dead horse sooner than a lion could. He, of course, included the families of the three flies. A single fly, *The Naturalist* tells us, will sometimes produce 20,000 larvæ, each of which, in a few days, may be the parent of another 20,000, and thus the descendants of these flies would soon devour an animal much larger than a horse.—*Sci. Am.*

IN AUSTRIA AND HUNGARY there are no dentists, medical men alone being allowed to practice dentistry. Before the year 1876, in order to practice dentistry in Holland it was necessary to hold the diploma of medicine, surgery and midwifery. The law has now been amended, a special course of study and special examinations having been provided for, as in Germany, Russia and Switzerland.

PULQUE is the stimulant of Mexico. It is made out of the juice of the cactus, and is sold at a cent a glass. It is said to look bitter, smell loud, and taste yellow, but it gets there just the same.

DR. J. G. VAN MARTER, of Rome, Italy, has lately received a number of distinguished honors. His *Alma Mater*, Williams College, has conferred upon him the degree of Master of Arts. The Imperial German Archæological Society of Berlin, Rome and Athens has elected him a corresponding member, and the Vatican has sent him a silver medal for his literary and scientific work, no inconsiderable portion of which was given to the world through THE INDEPENDENT PRACTITIONER. We hope, in the not distant future, to have another important article from him on archæological dentistry.

DR. G. W. MELOTTE, of Ithaca, exhibited, at the last meeting of the American Dental Association, his method of getting an exact articulation in artificial crown and bridge-work, by reproduction of the precise contour of any tooth. It is done by means of an impression compound and fusible metal, and five minutes suffice to make a complete die for striking up the crown. Those who have seen it in use by Dr. Melotte will be glad to know that the material is now on sale by the S. S. White Manufacturing Co., who send complete instructions for use with every package.

PAUL BERT, the well-known French physiologist and scientist, died at Paris, Nov. 11th. For the last ten years he had mainly devoted himself to political affairs, and hence his name was not as frequently seen in scientific journals as formerly. Dentists are greatly indebted to him for his researches upon anæsthetics, especially Nitrous Oxide Gas.

AT A RECENT MEETING of the Dresden Agricultural Society, a local pharmacist reported that, in the neighborhood where the deadly night-shade grew abundantly, the bees had incorporated with the honey sufficient poison from these flowers to account for numerous and occasional fatal cases of poisoning.—*Med. and Surg. Reporter.*

A QUACK DOCTOR in Pennsylvania, in answer to the shrewd questions of deluding counsel, recently testified in court that he decapitated his patient, the defendant in the case, performed a Cæsarean section upon him, and finally made an autopsy and cured him. It was not the quack's regular day for lying, either.

THE ARCHIVES OF GYNÆCOLOGY, OBSTETRICS AND PÆDIATRICS, New York, series of 1886, just completed, has met with such warm encouragement that the publishers have decided to issue it monthly, and commencing with January the parts will so appear, instead of bi-monthly as heretofore.

"GOOD MORNING, Mrs. Gilligan; how is Patrick this morning?" "Sure, he's no better, sir." "Why don't you send him to the hospital to be treated?" "To be treated, is it? Faith an' it's the delarium triminus he has already."

SWIFT once said that the reason a certain university was a learned institution was that most persons took a little learning there, and few brought any away with them, and so the learning accumulated.

WHAT IS MORE PATHETIC than to see the simple faith with which a bald-headed customer will buy an infallible hair restorer from a bald-headed barber?

This book must be returned to
the Dental Library by the last
date stamped below. It may
be renewed if there is no
reservation for it.

OCT 1 1 1979

H.R. Abbott
Mem. Lib.

Law Book!

Author

Title .. The Independent Practitioner, Vol. 7, 1886.

Harry R. Abbott Memorial Library

FACULTY OF DENTISTRY

TORONTO

